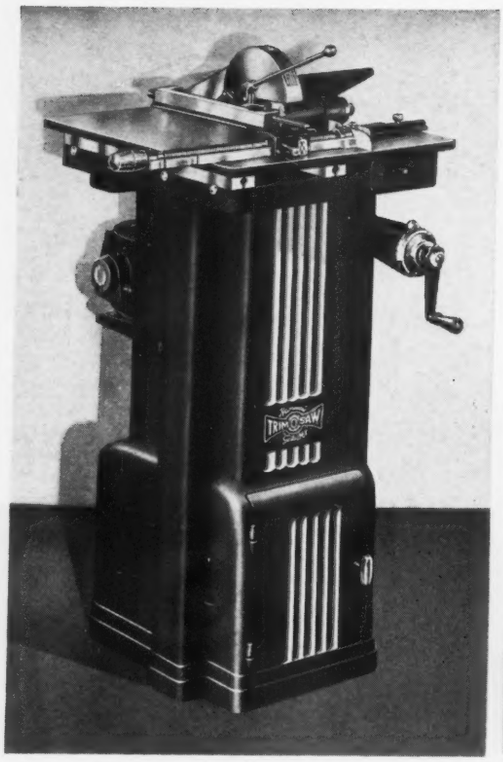
PRINTING EQUIPMENT ENGINEER

JANUARY 1938

TECHNICAL PUBLICATION FOR PRODUCTION AND MECHANICAL EXECUTIVES IN THE GRAPHIC ARTS INDUSTRY

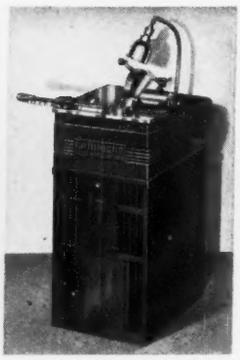


G-3 Glider TrimOsaw

GLIDER *Sweeps to* FAVOR

In two short years more than 500 Gliders are in America's finest plants.

Now two new smaller Gliders are companions of the original Glider. They have every Glider feature . . . plus being available as bench and floor models and with strip material cabinet.

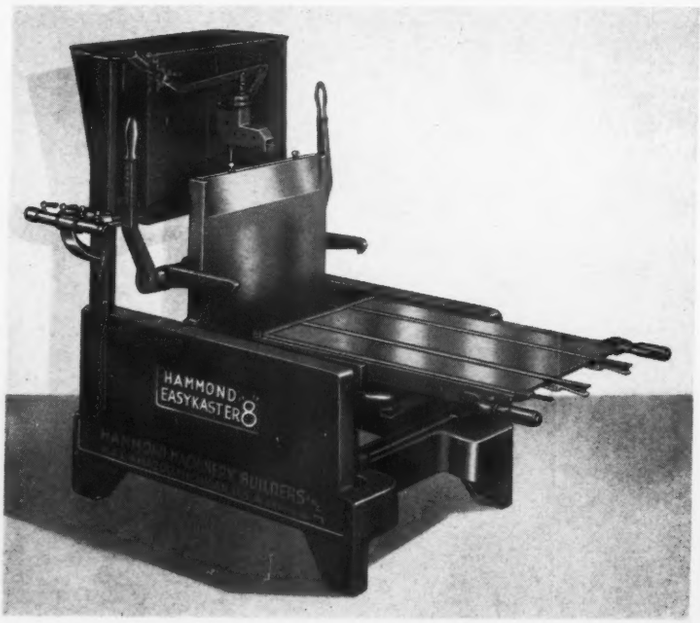


G-22 Glider

•

A Few Users of the 500:

Times-Mirror, Los Angeles	2
Journal Gazette, Fort Wayne	2
Boston Herald-Traveller, Boston	8
Albany Evening Union, Albany	2
New York Sun, New York City	2
New York Daily News, New York City	10
Youngstown Vindicator, Youngstown	4

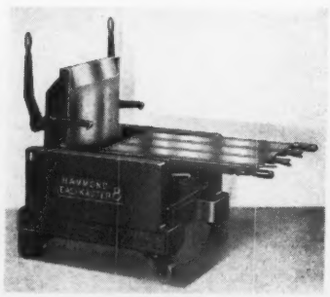


EasyKaster "8" Model EK8-P

HAMMOND *Presents the* FLAT CASTER

Already a leader, already in many plants, the automatic locking EasyKaster "8" is sweeping to favor with its 8 features:

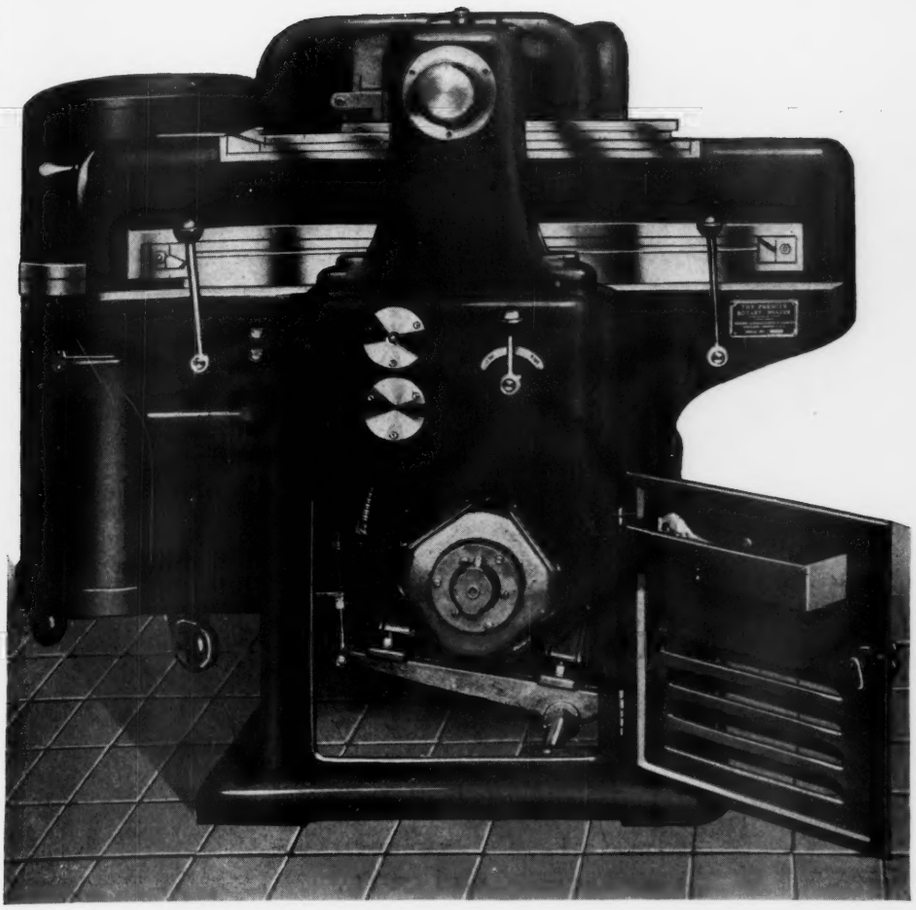
1. **Scientific Clamping Pressure Distribution.**
2. **Automatic Change from Shell to Type-High.**
3. **Heavier Bed Ribbing and More Weight Throughout.**
4. **Greater Casting Width—20".**
5. **Covered Rolling-Bed Rails.**
6. **Wheel Locks on Model EK8.**
7. **800-lb. Insulated Melting Pot with Valve Control.**
8. **Surprisingly Easier Operation and Unbelievable Casting Accuracy.**



Model EK8

Hammond Machinery Builders
INCORPORATED
NEW YORK 1604 Douglas Ave., KALAMAZOO, MICH. CHICAGO

538 So.
CHICAG



STA-HI

STANDARD EQUIPMENT

- AUTOFORMER
- JUNIOR FORMER
- VACUUM CASTING BOXES
- POWER-LIFT FORM FILES
- FINALTRIM
- PREMIER ROTARY SHAVER

PREMIER ROTARY SHAVER

INSTALLATIONS

Western Newspaper Union, New York
Western Newspaper Union, Chicago
Western Newspaper Union, Indianapolis
Western Newspaper Union, San Francisco
Western Newspaper Union, Portland, Ore.
Columbus Dispatch, Columbus, Ohio
New York Times, New York
New York World-Telegram, New York
Oregon Journal, Portland, Ore.
The Oregonian, Portland, Ore.
News-Telegram, Portland, Ore.
Providence Journal, Providence, R. I.
Reilly Electrotype Co., New York (3)
Royal Electrotype Co., Philadelphia
National Electrotype Co., New York
Lake Shore Electrotype Co., Chicago
Partridge & Anderson, Chicago
Advance Electrotype Co., Indianapolis (2)
Indianapolis Electrotype, Indianapolis
Bryan & Brandenburg, Los Angeles
St. Paul Dispatch, St. Paul, Minn.
Polish Daily News, Detroit, Mich.
Detroit Free Press, Detroit, Mich.
St. Louis Star-Times, St. Louis, Mo.
Merchants Matrix Co., Chicago, Ill.
Frase Electrotype Co., Los Angeles

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538 So. CLARK ST.
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417 OREGONIAN BLDG.
PORTLAND, OREGON

Things Pertinent

To modern composing room practice discussed—New bulletin board idea

By Sol M. Cantor*

THE MOST difficult problem that faced us when we started using the machine as a tool for the production of fine typesetting, instead of the usual yardage kind, was the training of operators to regard individual letter forms, words and lines, rather than galleys. Today, I am proud to say that many of our machine men who are part of this modern composing room movement turn out a product that is second to none.

Of course, the machines must always be kept in the best possible condition. The metal must be analyzed at least every 30 days; the mats examined once a week and slugs checked for type height and parallelism once a day.

The make-up department should have both flat and inclined surfaces to work on. Slugs are easier to handle on flat surfaces, while types are best handled on inclined surfaces. Plenty of galley racks and letter boards should be provided. The well-equipped modern composing room will also have plenty of saws—at least one to an alley and one for cut work only. An abundance of strip material should be placed at each saw and new wood furniture and reglets should be available. Of course, a power mitering machine is an absolute necessity. Most visitors are bound to be impressed when shown how easy it is to make a six point box on one of these machines.

When making up type forms with intricate run-arounds and angles, the use of base high material is very helpful. All areas where the cuts are to be placed are blanked out with this base high material and the cuts are laid on top. They can be glued on for proving and nailed on when final OKs are received.

The modern composing room found it expedient to have its staff visit an electrotype plant. Here, the men can be shown why it is necessary for a form to be properly locked up so that a good plate can be made. Many composing room craftsmen do not realize what trouble an electrotyper has to go through in order to get a half-way decent plate from a poor form in which pieces of rule and turned slugs act as guards; in which the type matter is not of uniform height; in which several pieces of blocking wood of different height are used to mount the plates on; in which old packing case wood is used for furniture.

It is good modern composing room practice to have good proof presses. A clean proof makes a good impression on the client at the very start. What a far cry from the time when a legend reading "This is a rough proof and does not show the finished appearance of the type and illustration" used to appear on all proofs to the beautifully printed proofs sent out by the modern composing room.

We also consider it good modern composing room practice to have a bulletin board in the shop, which can be used somewhat as follows: A poor piece of work is posted for criticism. What is wrong with the job is indicated. The names of the culprits are not given, but those who are responsible will see it and know who is responsible. After seeing this inferior work posted and criticized, the tendency is not to repeat the errors. Good examples are also posted and appreciation is expressed by the office for their excellence.

Thus, a sense of pride and friendly rivalry is created in the staff. Customers' comments, good and bad, are posted for all to see—the idea being that we want the staff to picture the client as a living human being, rather than some abstract thing.

Be Communicative

Pass on to other production and mechanical executives ideas which will help them in their work. Many of our readers do this in exchange for the profitable production ideas they find in *Printing* Equipment *Engineer*. Just write on proof paper with pencil—you won't need to take time out for dictation and typing in a formal way.

Mac Sinclair

—Editor.

*President, The Composing Room, Inc., New York, N. Y.; President, International Trade Composition Association. Abstract of talk given recently before Cleveland Club of Printing House Craftsmen, Cleveland.

BABCOCK REORGANIZED

The Babcock Printing Press Manufacturing Company was reorganized on January 3 and the company's assets were turned over to a new corporation to be known as the Babcock Printing Press Corporation of Delaware. The president is Noah MacDowell, jr., who has wide affiliations in the Graphic Arts Industry.

It is the intention of the new management to broaden the scope of the old company's products. Besides flat-bed and rotary printing presses, automatic piling, cutting and creasing presses and small automatic printing presses, several other presses will be added to the products manufactured by the new company.

ADDS EQUIPMENT

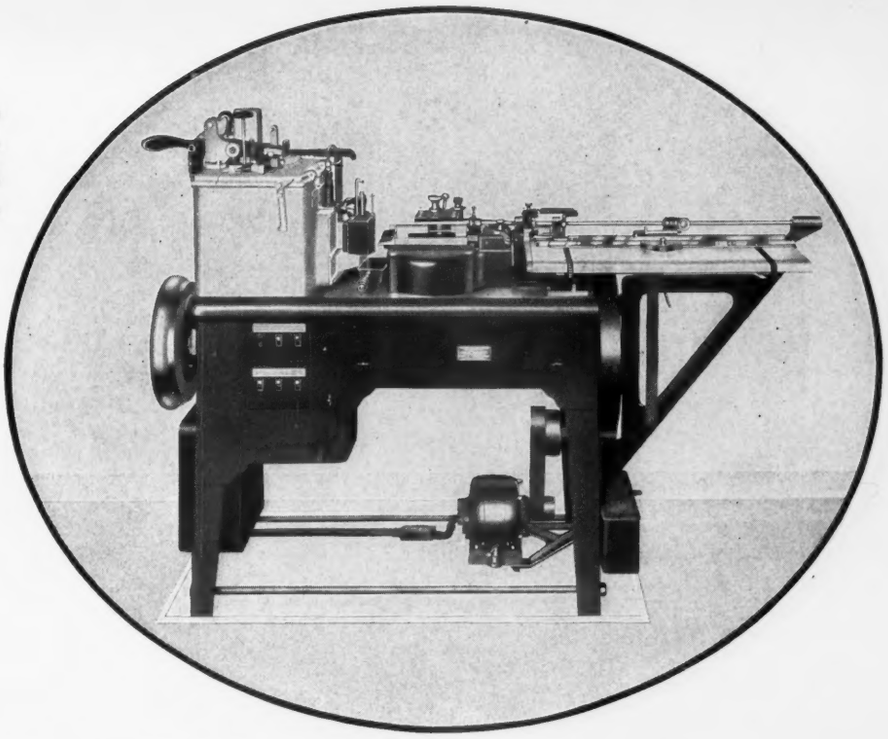
A Model 30 six-mold Linotype and an All-Purpose Linotype, with complete series in Metromedium No. 2, Metrothin No. 2, Metroblack No. 2, Memphis Bold, Bodoni and Bodoni Italic have been added to the composing room equipment of the Department of Publishing and Printing of the Rochester Athenaeum and Mechanics Institute, Rochester, N. Y. Several of these series run from 8 to 144-point. A Giant Caster Monotype is now part of the equipment, mats being provided for 42 to 72 point sizes.

NEW PRINTING INK COLORS

Two new colors for printing inks have been announced by the Dye stuffs Division, E. I. du Pont de Nemours & Company.

"Lithosol" Fast Yellow HL Powder is a lake color yielding bright medium shades of yellow. A pigment requiring no precipitating agent when mixed with or thrown on bases, it has demonstrated good tinctorial strength and working properties. It exhibits satisfactory fastness to light, acid and alkali. The new color is slightly greener and brighter in shade, and somewhat darker in masstone, than "Lithosol" Fast Yellow HN Powder, to which it is chemically akin.

"Lithosol" Scarlet 2YL has a deep masstone and yellow tint, and, when used as a strontium toner, closely resembles Du Pont Scarlet 2R for Lakes in shade. The barium toner is much lighter in masstone and yellower in shade than the strontium type, while the calcium salt is very blue in shade and slightly yellower in masstone. The outstanding fastness characteristic of Scarlet 2YL is its resistance to light. It is also unaffected by acids, alkalis or baking, and is non-bleeding in oils, acids and alkalis.



The Elrod lead, slug, rule and base caster, producing strip material from 1 pt. to 36 pt. in thickness.

Simplicity in Strip Casting

Simplicity is the cardinal virtue of the Elrod strip caster. Not only is the Elrod exceedingly simple in construction, having relatively few parts, but it is also notably simple in operation.

In consequence of this simplicity, the Elrod has the exceedingly practical advantage of requiring a minimum of operator attention. Once set and started, an Elrod will run for hours without any attention beyond occasional replenishment of metal supply, and removal of completed strip from the delivery table.

This makes the operation of an Elrod surprisingly economical.

The strip produced is uniform in height and thickness, and notably solid—entirely free from air bubbles and brittle breaks and welds.

The modest expense of producing with the Elrod high quality leads, slugs, rules and base makes it possible for the Elrod-equipped composing room to enjoy the great economy of a generous supply of strip material always ready to the compositor's hand. Such provision cuts composing room time on every job handled.

Information regarding the Elrod and specimens of Elrod-cast strip material will be sent upon request.

LUDLOW TYPOGRAPH COMPANY

Set in members of the Ludlow Karnak family

2032 Clybourn Avenue + + + Chicago, Illinois

HARRIS PRESS CONSTRUCTION

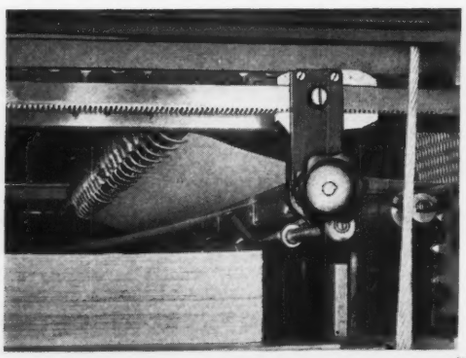
FEATURES VACUUM CONTROL OF SHEET IN DELIVERY

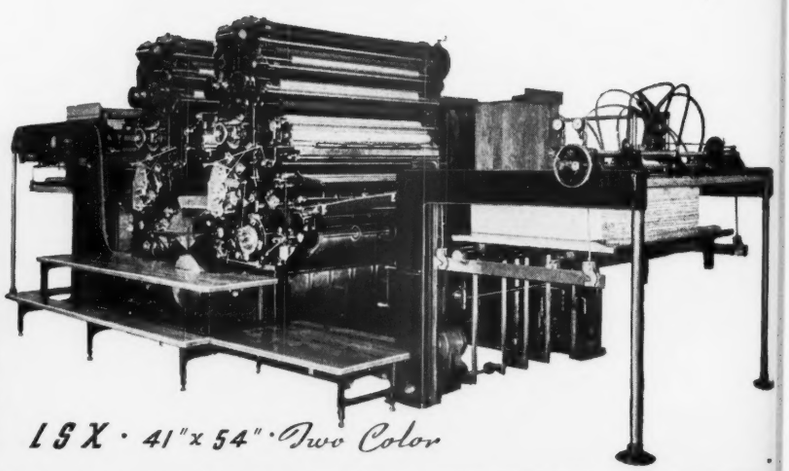
• Harris uses a unique type of suction mechanism that is fastened and mounted to the rear jogger and timed not only to stop the momentum of the sheet from the rear edge but in its downward action places the sheet on the pile in correct position for jogging.

The importance of the Harris vacuum control of the sheet in delivery is recognized when it is remembered that as the speed of machinery is continually increasing, the speed of the sheet being delivered increases. This Harris method of stopping the sheet by suction from the rear permits it to straighten out, and prevents the front edge from being damaged by stripper fingers or stops.

SOME FEATURES OF HARRIS COLOR GROUP

1. Revolutionary Harris H.T.B. Stream Feeder.
2. Precision Tapered Pre-loaded Roller Bearings.
3. Choice of Feed Roll or Rotary 3 Point Registering Mechanism.
4. Micrometer Dials for Setting Printing Pressures.
5. Quick Change Plate Clamps.
6. Double Size Transfer Cylinder.
7. Inker Load Eliminated from Printing Couplet.
8. Harris Cleanable Ink Fountain.
9. Adjustable Ink Vibration.
10. Multi-Unit Construction.
11. Spiral Gear Drive.
12. Spring Grippers Throughout.
13. Efficient Pile Raising and Pile Lowering Mechanism.
14. Vacuum Control of Sheet in Delivery.
15. Dial Press Speed Indicator.
16. Feeder and Delivery Accommodate Any Style or Size Platform.
17. One Piece Base with Extra Heavy Framing and Construction.
18. Micrometer Adjustment of Ink Supply.
19. Ball Bearing Mounting of All Ink Rollers.
20. Improved Delivery Gripper Bar and Mounting.





ISX · 41" x 54" · Two Color

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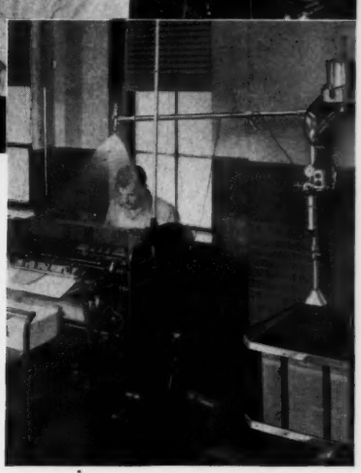
GENERAL OFFICES: 4510 E. 71st St., Cleveland, Ohio • HARRIS SALES OFFICES: New York, 330 West 42nd St. • Chicago, 343 South Dearborn St. • Dayton, 813 Washington St. • San Francisco, 420 Market St. • FACTORIES: Cleveland, Dayton



Lick the Offsetting Bugaboo!

No more slip-sheeting. No more racking. No more slowing down of presses. No more ink doctoring! The perfected spray system has licked the offsetting bugaboo!

The DeVilbiss system *is* that perfected system. It is engineered from the ground up to eliminate offsetting. It is entirely automatic. It is designed to meet every pressroom need. You can start with a single, one-gun, portable outfit and add to it as your needs require, without discarding any of the units you have already purchased.

Start now to lick the offsetting bugaboo in *your* plant. Write for full details.

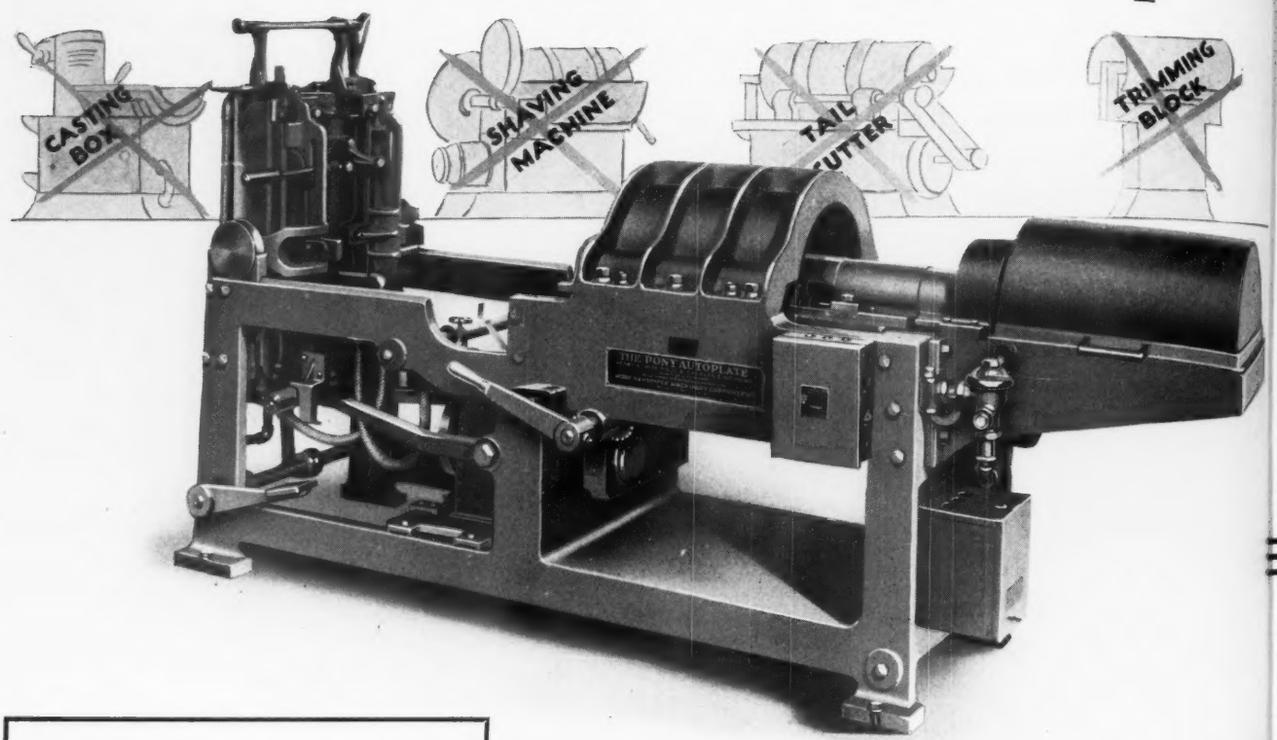
DeVilbiss

THE DEVILBISS COMPANY, TOLEDO, OHIO

Equipment and solution licensed under U. S. Patent No. 2078790

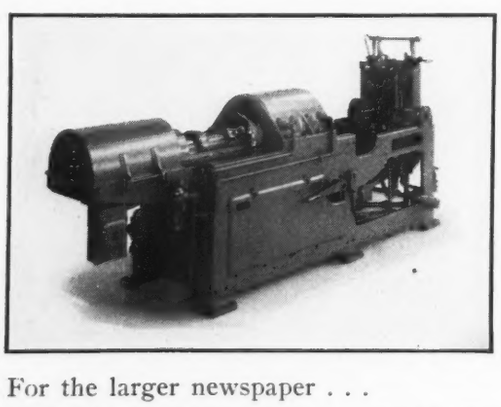
FOR ECONOMY AND BETTER STEREOTYPING

The Standard Pony Autoplate



THE PONY AUTOPLATE
casts,
shapes,
shaves,
trims and
cools the plate,
eliminating all
hand-cleaning,
hand-tooling,
hand-dipping,
etc.

It produces plates of uniform thickness and accurate curvature . . . reduces web-breaks and newsprint waste . . . prevents damage to press blankets . . . and banishes many other losses and delays which are due to defective or inaccurate printing plates.



For the larger newspaper . . .
THE HEAVY-DUTY PONY AUTOPLATE

ONE machine in place of FOUR

The Pony Autoplate is typical of the American way of doing things. This one machine takes the place of several machines . . . and does a better job at lower cost. With no appreciable difference in first cost as between the Pony and the hand-box method of stereotyping, but with a substantial difference in favor of the Pony method *both in plate quality and operating costs*, the Standard Pony Autoplate is a remarkably profitable investment for any newspaper that is large enough to employ the stereotyping process.

The price of the Standard Pony Autoplate is $4,575. Like all other Autoplates, it can be furnished with the new vacuum equipment—the latest development for top quality stereotyping. Write for particulars.

Wood Newspaper Machinery Corp'n
Plainfield, New Jersey New York Office: 501 Fifth Ave.

Printing Equipment Engineer

Trade-Mark Registered U. S. Pat. Office

January, 1938

Volume 55 No. 4

A Monthly Publication

ESTABLISHED 1910

Member of Controlled Circulation Audit

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Published Monthly

AT 1276 W. THIRD ST., CLEVELAND, O.

Eastern Manager:

RUSS BIRCHFIELD, 509 FIFTH AVE., NEW YORK, N. Y. VANDERBILT 3-5191

Western Manager:

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A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.

Published by Don Will • Edited by Mac Sinclair

Associate Editors: Ira D. Pilliard, Adam Henry Reiser

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ROUTERS THAT ARE SKF-EQUIPPED FOR
DEPENDABILITY ALWAYS ASSURE
PRECISION
BUILT BY JOHN ROYLE & SONS, INC. SKF-EQUIPPED
Every revolution of the nine SKF Ball Bearings on this Royle Heavy Duty Photo-Engravers' Router is a study in hairline precision, unvarying smoothness, and general standupability. It's a study of carefree bearing performance that enables cutter-head spindles to go as fast as 25,000 r.p.m. while this machine, driven by a 1 h.p. enclosed motor, routs plates 32" front to rear, sidewise unlimited. Ever since SKF's became the first antifriction bearings to go on printing machinery, they've been good to the last turn. If it's performance you want, specify SKF Bearings.
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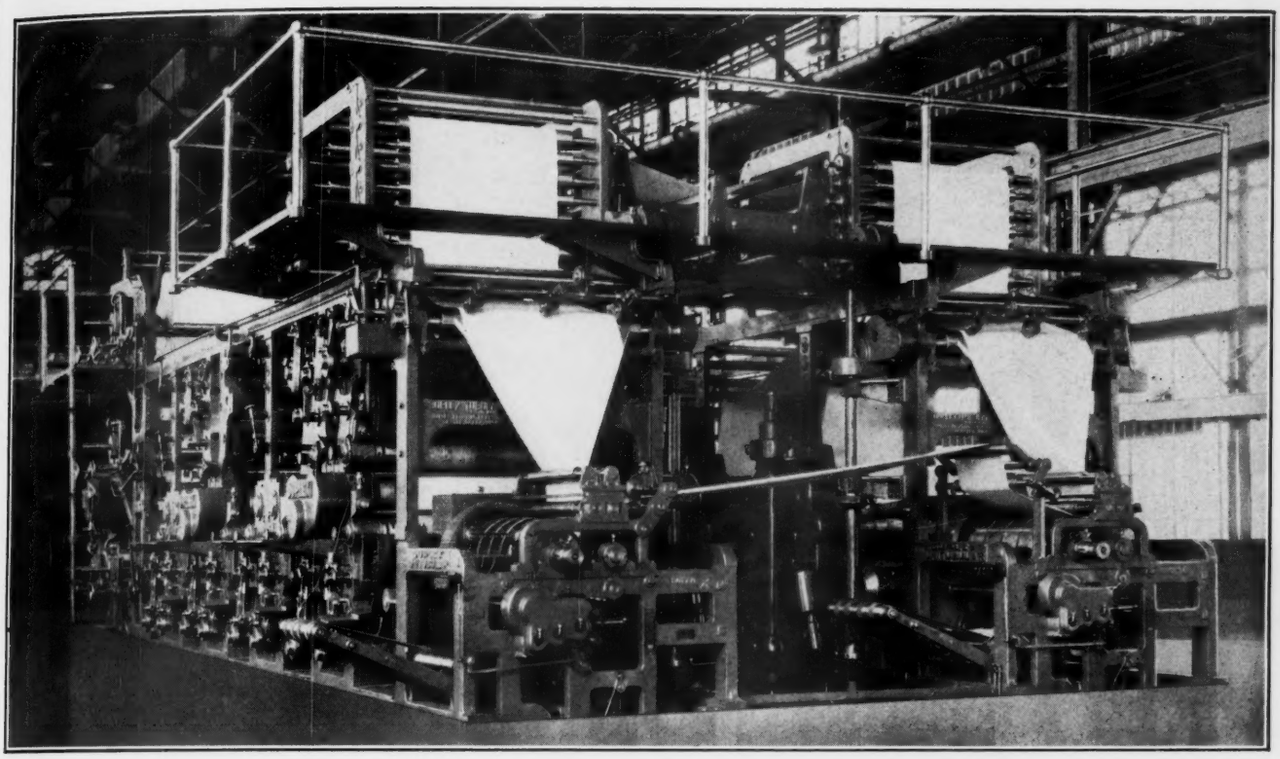
SKF makes more types and sizes of ball and roller bearings than any other manufacturer in the world.

"The Hindu" MADRAS, INDIA has purchased a new UNITUBULAR



DUPLEX UNITUBULAR PRESS ARRANGED FOR R. O. P. COLOR WORK

● Mr. K. Srinivasan, Esq., publisher of "The Hindu", one of the most progressive papers in all India, has placed an order for a new 8-unit Duplex Unitubular press. Plans have been made and work has started on a beautiful new building where the new Duplex press will be installed.

● This new press will be the 14th Duplex Unitubular press ordered for installation outside of the United States by publishers requiring the best equipment obtainable per dollar value and placed in direct competition with equipment offered by newspaper press manufacturers all over the world.

● The twinned press equipment illustrated here is a recent installation in the United States. It has a total capacity of 32 pages and is arranged for run-of-press color work. This twinned arrangement is admirably adapated to plants desiring to print comics, magazine sections or run-of-press color work in regular issues. Three colors and black or less can be printed on any desired page.

● Removable-interchangeable fountains, method of applying color cylinders, short leads from impression to impression, 40,000 per hour speed and the reputation of Duplex for building the finest newspaper press equipment available, shown by the fact that a large percentage of all the Daily newspapers in the United States and Canada are printed on Duplex presses, put the Duplex Unitubular press head and shoulders above any other type of newspaper press for this class of work.

● There is a representative in your territory who will be able to show you how the Unitubular press will increase the efficiency of your plant.

The DUPLEX PRINTING PRESS CO.

BATTLE CREEK, MICHIGAN, U. S. A.

Typical Results of Using

BLACK & WHITE

MATRIX CONTRAST SERVICE

BEFORE INSTALLATION
(one week's proofs)

	Number of Lines Set	Total Errors	Errors per 100 Lines
Virginian-Pilot	83,882	2,915	3.47
Ledger-Dispatch	70,842	2,421	3.42
	154,724	5,336	3.45

Comparison of proofreaders' news proofs before and after installation of BLACK & WHITE Matrix Contrast Service.

NORFOLK VIRGINIAN-PILOT AND LEDGER-DISPATCH

AFTER INSTALLATION
(one week's proofs)

	Number of Lines set	Total Errors	Errors per 100 Lines	Per Cent Reduction in Total Errors
Virginian-Pilot	89,484	2,163	2.42	30.26
Ledger-Dispatch	71,112	1,558	2.19	35.96
	160,596	3,721	2.32	32.75

Note the difference in total errors before and after installation of Black & White service—more than 1600 fewer correction lines in one week. Think of the savings in operators' time, machine time, and the time of floor men and others who handle corrections. Not to mention fewer errors in railroaded news matter.

BLACK & WHITE Matrix Contrast Service is guaranteed to reduce total errors in original machine composition at least 25 per cent. The usual average is considerably in excess of that figure, as in the case of the Norfolk Virginian-Pilot and Ledger-Dispatch, listed above. These savings are typical, not unusual, and are worth your consideration. Investigate!

MATRIX CONTRAST CORPORATION

Sole Licensees of the Percy L. Hill Matrix Contrast Patents Nos. 1,466,437 and 1,796,023

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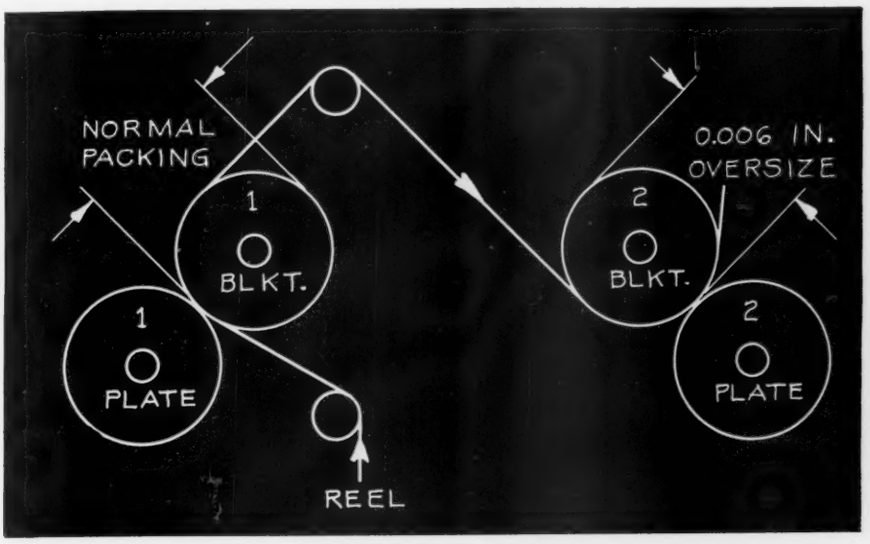
European Agents: Funditor, Ltd., 3 Woodbridge St., Clerkenwell Green, London, E.I.C.



Pulling Web

Through newspaper printing press units to eliminate offset improves appearance of first impression printing at Toledo Blade

By E. P. DOYLE*

NEWSPAPER production executives who take pride in the appearance of their papers have announced from time to time the results of experimental work undertaken by them in their pressrooms with reference to eliminating the poor appearance of first impression printing. Some of the experiments have consisted of greater wrap of the web about the impression cylinders, tension devices, extra thick plates, second impression blanket surface treatments and even a proposed device whereby a wiping roller is to be mounted on the second impression unit for the purpose of keeping the blanket clean of ink offset from first impression printing.

For some time now in the *Blade* pressroom we have been "pulling" the paper through the press unit instead of trying to "push" it through and I am very much pleased with the results obtained.

To obtain this condition it is necessary to pack the second impression cylinder 0.005 in. or 0.006 in. more than the first impression cylinder (which is the reverse of the common practice). The benefits to be derived will be a cleaner first impression print with practically no offset, because the sheet will run tighter between impressions but not tight enough to cause the sheet to break, if the packing on the second impression cylinder does not exceed 0.006 in.

Where both cylinders are packed alike on press units, or on units which have been supplied with plus packing on the first impression cylinder, dependence is placed upon the length of paper between the two impression cylinders slipping back toward the paper roll to govern the tension on the sheet between impressions. Inasmuch as the slippage occurs after the first impression has been printed, it is obvious that each first impression printing will not be presented to exactly the same place on the blanket at every revolution of the second impression cylinder. This causes offset on the first impression side of the sheet.

With an overpacked second impression cylinder, the section of the sheet between the first and second impression cylinders is tighter (has greater tension) than the section of the sheet coming off the roll of paper. Therefore, the slippage will be away from the roll of paper leading into the first impression cylinder. This slippage will not cause offset because the paper slips before it receives its first impression printing.

*Mechanical Superintendent, Toledo (O.) *Blade*.

1300—
And Still Coming!
Is Yours Among Them?

The Editor acknowledges with satisfaction the receipt of 1300-odd cards in the last five weeks of 1937 from production and mechanical executive readers telling us in what way Printing Equipment Engineer *is valuable to them in their work.*

The comments on these cards mention that the writers like Printing Equipment Engineer *because of the technical editorial content, equipment and supplies advertisements and the up-to-dateness of the magazine in keeping them informed of the latest technical and process developments in the Graphic Arts Industry.*

Naturally, we are pleased to receive these spontaneous comments from our readers and to know that they are interested enough to take the time to send us their opinions. These comments encourage us greatly. We pledge all of our readers that it will be our constant endeavor to make this magazine increasingly useful to them in their work.

If you have not already sent in the comment card accompanying the 1938 Equipment and Supplies Reference Number (November issue) please send it to us at once. We want comments from as many readers as possible so that we may be guided in making this magazine of the utmost value. Thanks now.—Editor

Letters
To the Editor

Suggests Tests on Several Newspapers

George Fuller is to be congratulated for his recent article in *Printing* Equipment *Engineer*. It is a definite and forward step to help solve a a problem that has been discussed at great length for the past several years.

The advertising agencies should be glad to cooperate to the extent stated in the article, as a solution in whole or in part of this problem is of mutual benefit to the Agency and the Publisher. The correct place to cure trouble is at its origin and the greater part of our problem pertaining to linage loss can be overcome by following a guidance scale, such as suggested. This guidance scale, however, should be based on the average result of tests made by several different newspapers.

Beyond this point, it is a problem for the newspaper mechanical executives to solve and try to standardize shrinkage from the time the mat is molded up to the delivery of the plate to the Pressroom. Various conditions such as molding equipment, molding combinations, mat construction, mat moisture content, scorching or drying equipment, handling, etc., enter into this consideration. It is my belief that newspaper mechanical executives will tackle their job with much enthusiasm, realizing that they have the cooperation of the agencies, and that both units will work towards correcting a condition that will be mutually beneficial.

John J. Shea,
Production Manager,
Worcester *Telegram* and *Gazette*

Gets at Crux of Matter

I want to congratulate you on the very fine November issue of *Printing* Equipment *Engineer*. In particular, I want to compliment you on printing the article by Mike Napolitano entitled "Bent Spacebands." I have read several articles on this subject—some with amusement and some with utter disgust, but Mr. Napolitano's analysis is the first one that gets at the crux of the cause for bent spacebands.

Here at the *Sun-Telegraph*, we repair justification bar braces by welding the point, or stud, full and then re-cut to fit which restores the stud to normal shape again. A new brace is kept in stock for use as a pattern in repairing the welded brace studs. In addition to this treatment, I have re-ground all justification bars in this plant on a surface grinder. Before doing this, the bars had all kinds of corrugations in all stages of wear on the surface which strikes the spaceband wedges.

Referring again to the article, I agree with Mr. Napolitano and still do not believe that "tight" lines have anything to do with bent spacebands. If the machine is normally adjusted, spacebands will not bend regardless of the tightness of line. Have you ever seen the wedges bent away from the sleeve? If the wedges were bent by tight lines wouldn't it stand to reason that they would be bent to the left instead of to the right?

James M. Dent,
Chief Composing Room Machinist,
Pittsburgh *Sun-Telegraph*.

Link Discusses Linage Loss

Dear Editor:

My good friend, George Fuller, of the Cleveland *Press*, had something to say in the last issue of *Printing* Equipment *Engineer* regarding "Linage Loss," due to mat shrinkage. It is not my thought to disagree with what he has written, because I do not disagree with his plan. I am writing this in the hope that I may amplify the argument he presented by going a little more into detail.

As has been said previously, we have heard this question argued for several years in the A.N.P.A. Mechanical Conferences. Each time the argument applied to national advertising. On different occasions some of us have tried to point out that the shrinkage problem has been solved by most newspapers on local advertising by simply setting the ad enough longer to compensate for the shrinkage. A number of newspapers allow one point per inch for local ad shrinkage which means if an ad is set 22 inches long plus 22 points it will measure 22 inches in the printed paper. That is probably somewhere near the average.

It has never been made clear to most of us why the national advertiser could not follow the same practice if both the advertiser and the agency want the full length ordered to appear in the paper.

At the last A.N.P.A. Mechanical Conference in Chicago standard colors were approved for color printing. No doubt this color standardization plan has eliminated many headaches for advertisers, advertising agencies and pressmen in newspaper plants. There seemed to be real cooperation all around in working out that problem.

If the same kind of cooperation is given in working out the shrinkage problem much can be accomplished. I do not contend that a perfect job can be done as there are differences in shrinkage because of a variation of moisture content in mats and the different processes used in making and molding mats. Certainly if some standard was decided upon there would at least be some inducement to work to that standard.

If a particular newspaper wishes excessive shrinkage to cut down paper width below the average and in order to get that shrinkage carries a higher moisture content in the mats, then that paper probably will have to take some loss because of shrinkage, but not so much as formerly. If another paper molds from a mat giving very little shrinkage then the ad may run a little long and the additional space, which would be more than ordered by the advertiser, would probably have to be deducted from the bill. In between these two I believe are a majority of the newspapers which get quite uniform shrinkage. If a standard is adopted that will meet their requirements, it is quite likely that many of the others might work to that standard. Not having any standard, there is nothing to which we can work.

I tried to make the point before the last Mechanical Conference that you could not run two ads side by side on the same page, one a local ad set with additional length to compensate for shrinkage and the other a national ad, not made to allow for shrinkage, and print both ads the space or length ordered. There is no need of going into detail regarding that because every newspaper mechanical executive thoroughly understands it. The national advertising shrinkage problem can be overcome by applying the same practice as is applied to local advertising. The ad will have to be made additional length in order to get the ordered amount of space in the paper. A certain schedule can be applied to electrotypes and another to stereotype mats that are sent to newspapers. We believe Mr. Fuller covered that amply in his article last month.

I know newspapers make full page ads and feature pages in their own engraving departments and these pages are made of sufficient length so that they are printed the space desired. So it would seem shrinkage can be controlled definitely.

Many national ads are surrounded by a plain rule border that can be matched by practically every newspaper in the country. If the newspaper was allowed to place this rule border around the ad, which would be the same as the advertiser has used on the plate or mat, and in so doing make the ad the proper length to compensate for shrinkage in each plant, the trouble would be eliminated on that kind of ad in each of the newspapers following that practice. Many times the ad would present a better appearance because damage sometimes occurs to the border in shipping or handling.

If art work is used in the top and possibly the bottom of the ad there is usually a spot somewhere in the ad or several spots where white space could be added that would increase the ad to the proper length. The agency could designate where this white space should be added. The space added would never be of sufficient amount to spoil the balance or typographical effect of the layout. The point I am trying to make is that the shrinkage problem in many national ads could be solved in most of the plants if the newspaper were permitted to do the things that can be done to overcome it, without interfering with the value of the advertisement to the advertiser.

Of course, in some plants there is a different shrinkage on run-of-paper color advertising and ads printed in comic or magazine sections. The difference, as is generally known, is because of different types of press equipment used on comic and magazine color, different stereotype processes and moisture content in mats. Each newspaper knows what that difference is in its own plant. Probably a standard should be worked out that will apply to each operation.

If the Mechanical department of the A.N.P.A. would send out a questionaire to all the daily newspapers in the United States and Canada and get the information from each as to how much shrinkage is being allowed for when setting local advertising, it would give some idea of the average. The information would at least be of some help in analyzing the problem and might result in some standard being worked out. Probably in this same questionaire information should be obtained regarding mat moisture content, width of type page (in pica ems), width of paper roll, whether direct pressure or roller used in molding mats, etc.

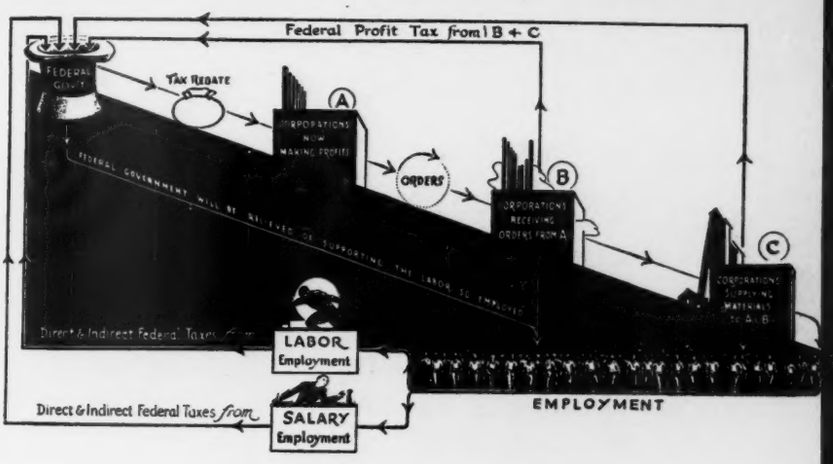
Why not approach the question with the same interest and determination that we did the standardization of color? A formula that will apply to most newspapers can be worked out and made available to national advertisers and agencies who desire to secure and use such information. If that can be done, much misunderstanding and confusion will be eliminated for everyone concerned.

Very truly yours,
Leon A. Link,
Supt. Composing Room,
Akron (O.) *Times-Press*.

Eighteen Pt. Nova Script

SIX POINT DE LUXE GOTHIC
SIX POINT DE LUXE GOTHIC

Among the latest faces announced for the commercial printer by Intertype Corporation are Nova Script, cut in the size shown above, and De Luxe Gothic with bold which is now ready in several sizes and two combinations.



Plain Common Sense

PRODUCTION and mechanical executives in commercial and newspaper printing plants generally can be instrumental in stimulating action for exemption of all corporation current net earnings from federal taxation. This can be accomplished by discussing with their managers the Henry A. Wise Wood Plan. In turn, the business executive can take the necessary steps to get in touch with the proper governmental representatives in Washington, D. C. If sufficient demand is made by industry, certainly our public servants should act accordingly. The Henry A. Wise Wood Plan applies not alone to the Printing Industry but to all Industry in general.

Loot at the diagram. It illustrates graphically the supporting links in a complete cycle. The Plan provides a way for Industry to help itself. Industry *will* help itself—if permitted. Labor is self-respecting—it wishes to be provided the means for *earning* its livelihood.

The Henry A. Wise Wood Plan

During the present recession let all corporation current net earnings which are reinvested in plant be exempt from federal taxation.

How This Plan Would Operate

Let us assume that a corporation invests $100,000 in plant extension. The corporation would then be permitted to claim a deduction of $100,000 from current net earnings before determining the profit and undistributed earnings taxes.

Results

This plan would provide a stimulus to buying, as the tax saved would virtually be the equivalent of a reduction in the price of the buildings or equipment purchased.

This $100,000 would go to other corporations supplying the capital goods so purchased and these companies would in turn purchase materials and employ labor.

This $100,000 purchase of capital goods would give direct employment to 100 men for about six months.

The labor so employed, as well as the concerns receiving orders for equipment, would contribute to Federal income through many avenues of direct and indirect taxation. It is thus apparent that the Government would gain back the waived revenue even before the completion of the cycle, because of the secondary tax returns generated and because men so put to work would be taken off relief rolls and Federally financed public works.

Glostone Inks

American Printing Ink Company, Division of General Printing Ink Company, has just published a specimen book showing 30 colors of its Glostone Inks. The book is spiral-bound and in general shape simulates the appearance of a large cut gem. Each of the pages is devoted to showing a particular color of Glostone Ink.

It is stated in the foreword that Glostone Inks have been tried and tested in pressrooms since 1934. A list of suggestions tells the pressman how to get the best results from these inks.

In conjunction with this specimen book, another has been prepared showing Glostone Inks on clay-coated stock for the carton field.

A copy of the book may be obtained by any production executive by addressing American Printing Ink Co. direct or in care of *Printing* EQUIPMENT *Engineer.*

P-Double-E File No. 5W

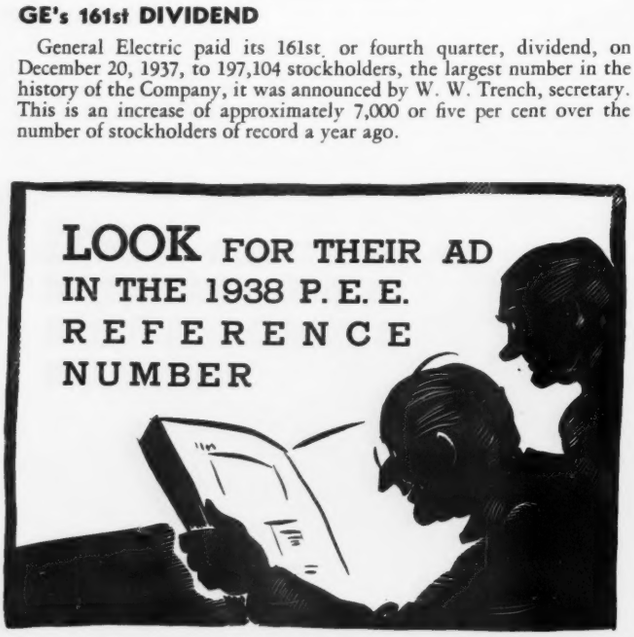
KLUGE ACTIVITIES

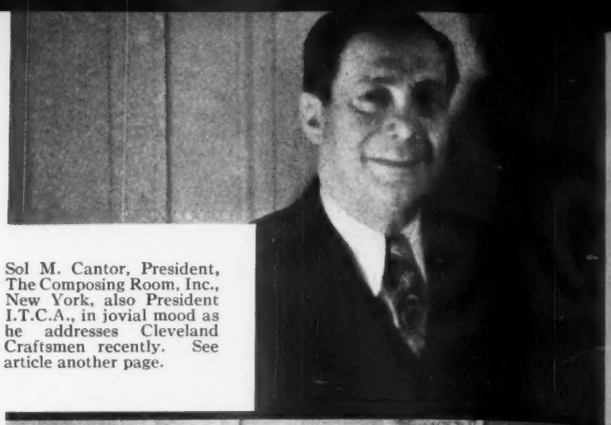
George Wall, Dallas manager for Brandtjen & Kluge, Inc., has sent out cards to local printers inviting them to bring their platen problems to the company's branch office at 217 Browder Street on Saturday afternoons. On this "at home" day, Mr. Wall will conduct a combination clinic, school, and information bureau, the idea being to make printers and their pressmen better acquainted with the modern automatic platen press and its possibilities.

The Los Angeles branch of Brandtjen & Kluge, Inc., at 1232 South Maple Avenue, started a school for platen pressmen on January 5th. Classes will be continued every Wednesday and Thursday evening, from 6 to 8 p. m. until further notice. H. F. Linsday, local manager for the company, will have charge of the classes. Instruction is free on both Kluge press and feeder.

GE's 161st DIVIDEND

General Electric paid its 161st. or fourth quarter, dividend, on December 20, 1937, to 197,104 stockholders, the largest number in the history of the Company, it was announced by W. W. Trench, secretary. This is an increase of approximately 7,000 or five per cent over the number of stockholders of record a year ago.



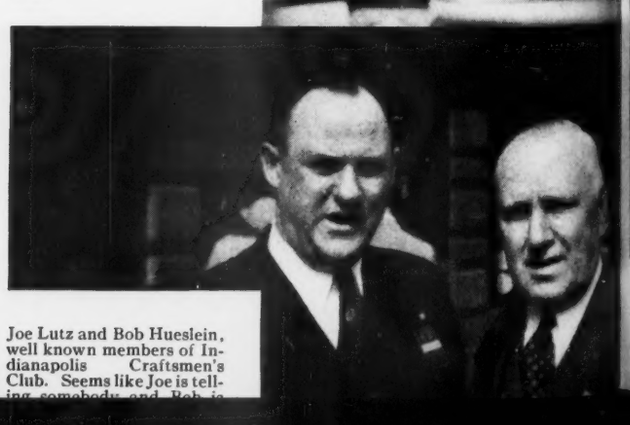


Sol M. Cantor, President, The Composing Room, Inc., New York, also President I.T.C.A., in jovial mood as he addresses Cleveland Craftsmen recently. See article another page.

Henry Messina, Technician, and Victor Fishburn, Vice President, Burgess Cellulose Co., with George W. Kennel, Technician, Certified Dry Mat Corporation, pay a visit to the editor.

Otto Lange, Engraving Superintendent, the Cleveland **News,** manipulates his Square Stop Diaphragm Control—produces round dots in halftones. See article on another page, this issue.

Frank B. Gillam, recently General Superintendent, Consolidated Press and Printing Co., Cleveland, now represents Charles Eneu Johnson Ink Co. in Cleveland. Is Vice President Cleveland Craftsmen's Club.

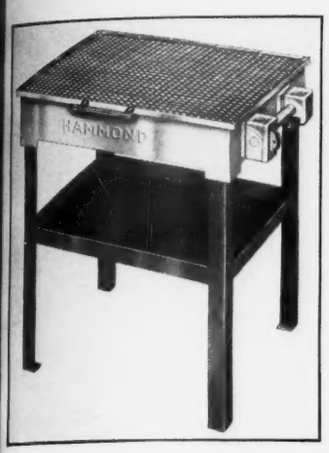


Joe Lutz and Bob Hueslein, well known members of Indianapolis Craftsmen's Club. Seems like Joe is telling somebody and Bob is

Equipment Progress

Full Page Thermostatically-Controlled Scorcher

Hammond Machinery Builders, Inc., announces two new Scorchers, Models T-1 and T-2. Both Scorchers have identically the same features. These features are an adjustable thermostatic control, a more rigid self-ventilated hinged cover, faster and more efficient insulated heating units. The Model T-1 has a bed size



View of Hammond's new thermostatically controlled flat stereotype matrix scorcher.

of 14 in. by 18 in. and Model T-2 has a bed size of 21 in. by 26 in. Both models can be supplied with or without the steel stand. The insulation feature protects against excessive heating of anything on which the Scorcher is placed when installed as a bench model.

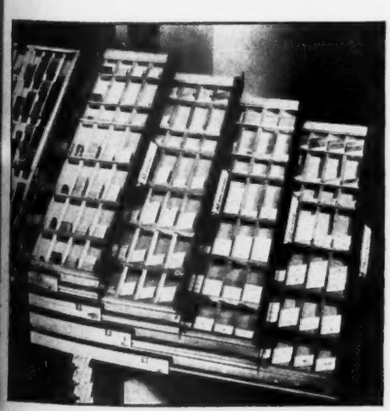
These new Scorchers have been produced by Hammond Machinery Builders as companion units to the new Hammond EasyKaster "8"s.

P-Double-E File No. 2G12.

Ludlow Matrix Cabinet

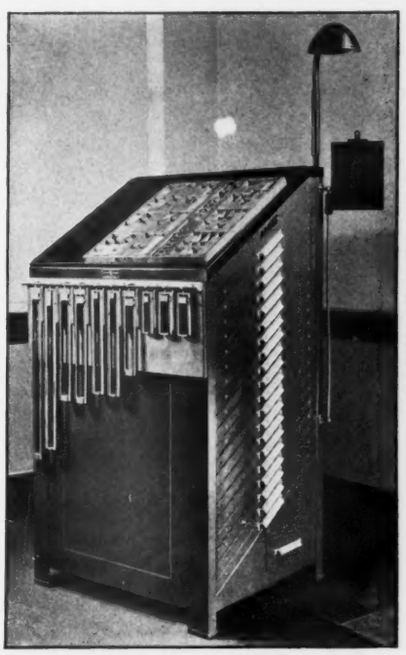
One of the latest developments in Ludlow equipment is the new Universal Matrix Cabinet. This steel cabinet, while of standard Ludlow matrix cabinet height, has enlarged cases in which all standard Ludlow matrices, roman or italic and of any point size, stack upright in the box compartments, to facilitate handling with maximum rapidity.

These enlarged cases have materially increased matrix-holding capacity. This new Universal cabinet may be used advantageously in supplementing the regular Ludlow matrix cabinet equipment of newspaper and other composing rooms making more frequent use of the larger point sizes.



View of new large cases in Ludlow Universal Matrix Cabinet. The cases slide on roller bearings to assure easy in-and-out action irrespective of size or number of matrices in the case. Everything required in producing composition is within reach of the operator.

Each case is equipped with combination label holder and case handle. Special angular italic filler blocks, (easily inserted or removed) are provided for converting the standard roman case into an italic case. Along the inner side of each matrix case, a vertical matrix channel extends the full depth of the case. This channel may



View of Ludlow new Universal Matrix Cabinet is of standard Ludlow matrix cabinet height but is fitted with enlarged cases in which matrices are stacked upright to facilitate handling. Separate unit space trays rest on the sloping work top. Stick rack holds ten Ludlow matrix sticks. Sliding copy holder and lamp fixture are other conveniences.

be divided by readily removable cross-partitions into as many as eleven convenient boxes for extra characters, or, with a steel pica scale attached alongside of the channel, it may be used for assembling long lines when desired.

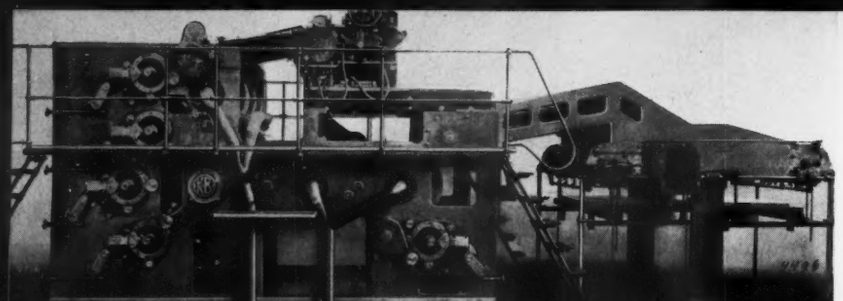
P-Double-E File No. 1E.

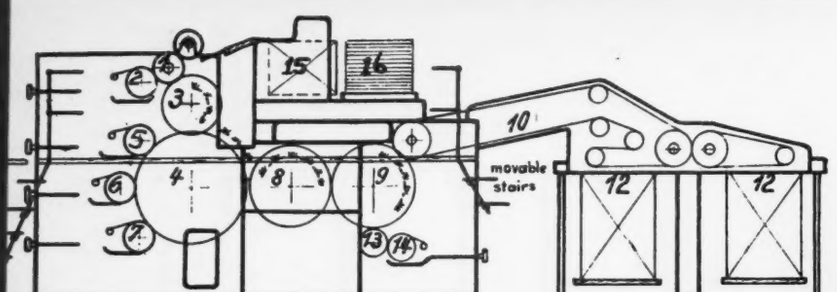
Multi-Color Sheet-Fed "Egli" Rotogravure Press

The Koenig & Bauer "Egli" rotogravure printing press, it has been announced by Intercontinental Marketing Corporation, will print large sheets (30 in. by 44 in.) four colors on one side of the sheet and one color on the opposite side at a running speed of 1500 sheets per hour. Floor space required is 29 ft. overall. Maximum height of highest part of press is 10 ft. Maximum width is 12 ft. 9 in.

Two feeding tables (*15* and *16* in the diagram) are incorporated in the press. While the machine is operating from one feeding table, stock can be piled on the other feeding table which can be shifted into operating position in a minute's time after the sheets in the first table have been exhausted. Paper piles as high as 24 in. may be placed on the feeding tables. The distance from table to floor is approx. 5 ft.

Copper tubes in lieu of cylinders are employed as the printing element in the Koebau machine. The tubes, weighing 115 lbs., are easily slipped over the kernels





Side elevation diagram showing component parts of Koebau Egli Gravure Printing Press which has just recently been announced by Intercontinental Marketing Corporation. In the printing and drying operation, a sheet of paper passes through the press as follows: The sheet which is fed by the feeder *15* is seized by the grippers of the feeding and impression cylinder *1* and receives the first print (yellow) from the picture cylinder 2. Transmission cylinder 3 carries the sheet to impression cylinder *4* upon which are four printing surfaces. During the first revolution of impression cylinder *4* the sheet receives the first impression of the second or red color from picture cylinder *5*; during the second revolution the third or blue color is printed by picture cylinder *6*, and during the third revolution of impression cylinder *4* the fourth or black color is printed by picture cylinder 7. During the printing of the red, blue and black colors the sheet is held stationary by a gripper system on impression cylinder *4*. After the third revolution the sheet is transmitted to drying drum *8*, from which it is passed onto the chain gripper system *10* which in turn deposits the sheet on one of the pile deliveries *12*.
While one sheet is being printed as described above, the other printing surfaces of the impression cylinder *4* are also covered with three other sheets which are subjected to the same printing and drying process.

(cores). The shifting machanism is such that the tubes will not be damaged when the tubes are slipped over the cores.

Ink drying devices: After the first or yellow color is printed, the sheet is transferred to a drying drum (3 in the diagram) which dries the color by means of a blowing device inside the drum. The other colors are dried while passing a blowing device (indicated by the comb-like segments on the circumference of impression cylinder *4*. After the fourth color is printed, the sheet is transferred to drying drum *8* which, as well as drying drum *9*, completes the drying process by means of a blowing device from *inside* the drum.

Since the impression cylinder makes a complete revolution before the following color is printed, sufficient time is provided so that the last printed color is dried properly.

The Koebau Egli photogravure press may also be equipped with a verso (opposite side of the sheet) printing unit for letterpress instead of gravure printing, especially in cases where the text must be changed several times during the run of a particular job.

Net weight of the press is approx. 36 T. Driving power required is 8 h.p. Motor capacity 8 kw. Running speed, as stated above, 1500 sheets per hour printing five colors in one run.

Further information may be obtained from Intercontinental Marketing Corporation direct or in care of *Printing* EQUIPMENT *Engineer*.

P-Double-E File No. 2B13.

Challenge Power Ink Distributor

The new Challenge Power Ink Distributor is designed to take the drudgery out of hand-inking for printers, engravers and electrotypers who take hand-proofs. Power equipped with a ¼ h.p. motor, this unit is controlled by a snap switch located on top of the stand. The inking process is automatic. In operation, the operator places a hand-roller on the distributing cylinders, turns on the power, and in a few seconds

the roller is uniformly inked. One or more colors may be used.

The unit has a rack on which to hang the rollers when not in use, thus keeping them from flattening out. The metal distributing cylinders can be washed quickly with a wiping cloth saturated with ink solvent.

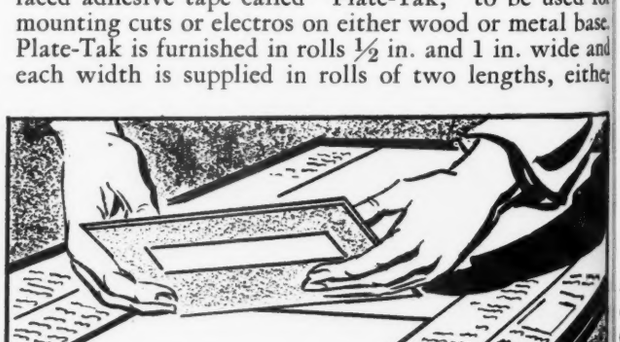
This Power Ink Distributor is finished in olive green and requires only a few feet of floor space. Shelves in the stand provide for storage of proof sheets, ink and other supplies.

Further information is available on request to The Challenge Machinery Co. direct or in care of *Printing* EQUIPMENT *Engineer*.

P-Double-E File No. 1E.

Plate-Tak Adhesive Tape

Van Cleef Bros. of Chicago have announced a double-faced adhesive tape called "Plate-Tak," to be used for mounting cuts or electros on either wood or metal base. Plate-Tak is furnished in rolls ½ in. and 1 in. wide and each width is supplied in rolls of two lengths, either



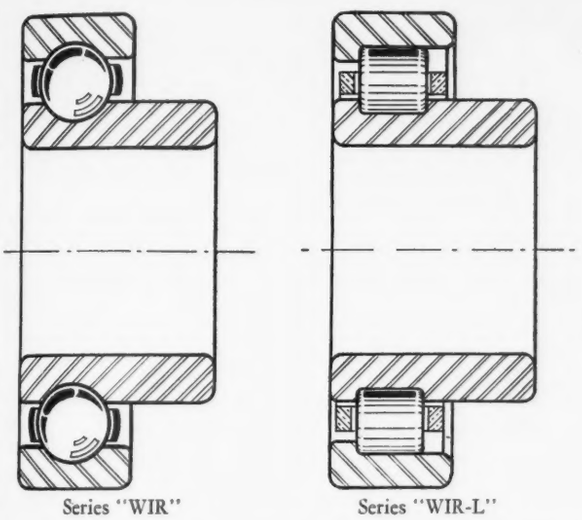
25 yds. or 50 yds. In use, a piece of the tape is cut from the roll and the protective covering is removed to expose both surfaces of the tape which is then placed on the back of the cut. The cut is now applied to its base and is "set" by pressure of the hand. Manufacturer states that various tests have been made and owing to the thinness of the tape there is no bumping-up effect. Cuts may be easily removed from bases by lifting.

Further information regarding Plate-Tak may be obtained from Eastern Newspaper Supply direct or in care of *Printing* EQUIPMENT *Engineer*.

P-Double-E File Nos. 1A and 2G.

New Ball and Roller Bearings

Norma-Hoffmann Bearings Corporation is now supplying two new types of Precision Bearings—the WIR Series of Ball Bearings and the WIR-L Series of Roller Bearings—as shown in the diagrams. The distinctive feature of these new series is the use of a wide inner ring of double-row bearing width, in combination with an outer ring of single-roll width. The bearings have been designed primarily for opposed mounting in electric motors and similar equipment. The wide inner ring insures a better sealing on the shaft than the standard single-row ring. In many cases also it avoids the necessity for threading the shaft and applying lock nuts or other locking devices. This elimination of threads permits a larger shaft extension diameter for a given bearing bore and also avoids weakening of the shaft by threading. The WIR Ball Bearings are available in the medium metric series, from 25 to 55 m/m bore. The WIR-L Cylindrical Roller Bearings with one-lipped outer ring are available in the medium metric series, from 30 to 130 m/m bore.



Series "WIR" Series "WIR-L"

Further information may be secured from Norma-Hoffmann Bearings Corporation direct or in care of *Printing* EQUIPMENT *Engineer*.

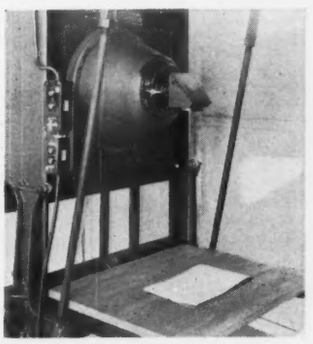
Revetch and Beda Proofing Methods

Two methods for obtaining reproduction proofs have appeared upon the market recently. Revetch is a method of proofing upon light sensitized paper, which, it is claimed, produces an accurate reproduction of any type in reverse, *i.e.*, white type on a dark background. The Beda method of proofing employs a type of paper which receives an impression from the type and at the same time removes the necessity of laying a benday screen in the manner customary through photo-engraving methods.

It is reported these two proofing systems may be licensed to one firm in a city by the Graphic Arts Research Foundation, of which F. H. Bartz is the director.

All-Metal Overhead Camera

An overhead camera of all metal construction is now offered to the Graphic Arts by Lanston Monotype Machine Co. Included among the improvements is the horizontal platform beneath the lens, mention of which in a recent article in *Printing* EQUIPMENT *Engineer*, brought reader response. This idea permits photographing directly from an object, or it may be used for reversing. Type composition may also be photographed by means of this horizontal copyboard. The cone used fits the lensboard while the standard lens collar will fit the lens to the cone. Figure 1 illustrates the platform, cone, and prism employed in this method.



Close-up of the horizontal copyboard with lens and prism fixed at the vortex of the cone attached to the lensboard of the M-H 24-in. overhead camera. The lower control station shown in this picture moves the copyboard up or down as necessary to secure the enlargement or reduction afforded by the size lens and prism in use.

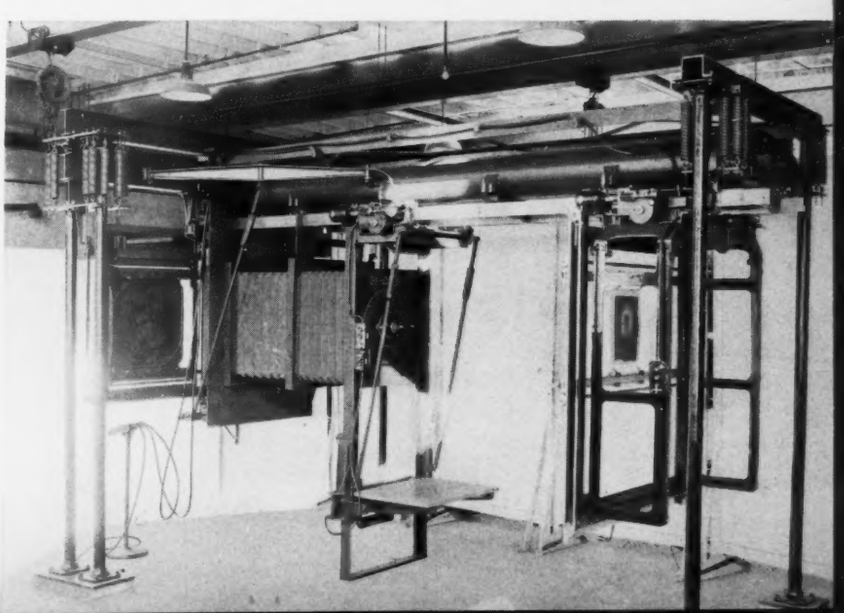
Two standard sizes, the 24-in. and 40-in., are made in the overhead camera, both built upon the unit principle. Just as extras or parts are wanted by the customer, they are added in their correct place. This may be done when the camera is first bought, or units may be added later.

Three-point suspension is employed with a special tubular truss which is said to remove efficiently any tendency to twist or cause loss of parallel. The copyboard end of the camera is attached to the central point of an inverted cross arm, while the back or darkroom end is attached to two anchorages of a cross-member, each of the three points being supported by nests of springs.

POSITION READINGS

A scale focusing system is provided with each camera. A special staff calculates the readings to hundredths of an inch for the size proportions for each individual lens. These readings are computed on the lens qualities in conjunction with factors determined by the technicians of Monotype. Feather fingertip control assures exact position as recorded by the registering devices on the lensboard and the copy-

Side view of 24-in. Monotype-Huebner all-metal construction overhead camera taken from the copyboard end. This view shows the negative (in the positive holder) on the axial line of the lens.



Outlook for 1938

By GERARD SWOPE*

BASIC conditions are sound. The farmers have had bountiful crops, at good prices, and there is plenty of food for all our people. The cotton crop has been good and, although prices are low, with the improvement in methods the profit to the grower is greater. Oil is flowing freely. The main disturbance to our economic order is due to lack of confidence on the part of business and lack of faith in the future, part of which is undoubtedly due to the restrictive taxation on business and private enterprise. There seems a distinct hope that there will be a revision in the tax on undistributed earnings, which will tend to help the smaller business man particularly, and also a revision in the tax on capital gains, which now interfere with the natural economic flow.

If a satisfactory solution is reached and the country is placed on a basis of limiting its expenditures to its income, with the absence of retalitation or reprisal on the part of either business or government, and indeed with a constructive effort and co-operation on the part of both, there is no reason why American business should not resume the function it has played so well in the past, through the merchanization of industry, of making possible the enjoyment of more goods for more people at less cost.

*President, General Electric Co., Schenectady, N. Y.

Predicts Large Production Volume

By H. A. PORTER*

1938 will demand speedy production in all lines. But to justify this speed the quality of things produced must measure up to a higher standard than ever before.

Harris-Seybold-Potter survey of business indicates that 1938 will find the application of many new advancements in printing equipment and a resultant demand for a greater distribution of what this modern equipment will produce.

Our survey also shows that many plants are now planning a rehabilitation of their pressroom program. They are basing their modernization plans both on prospects for more business and upon the experience of those other printing plants that have already prepared for expansion.

The Graphic Arts, with its use of Offset, will enjoy a large volume of production because it is prepared to do fast, efficient work on equipment built for accuracy and speed.

*Vice President in Charge of Sales, Harris-Seybold-Potter Company, Cleveland, Ohio.

board. This control is said to be so accurate as to enable coming back exactly to any given position.

At the right part of the picture is shown what is said to be the only oscillating copyboard attachment moving about a central point on any camera. This may be used in negative-positive-negative work, and is included in standard equipment. Curtains to be drawn to the photographic glass so as to keep direct or reflected rays of the arc lamp out of the lens; a glass-covered copyboard; ground-glass diffusing attachment; may all be found on, or placed in position on the sturdy copyboard holder. Movement is electric, inch or run buttons being provided on both lensboard and copyboard. Operation is simple, size reproductions being obtained by readings furnished for both lensboard and copyboard registers, for any given enlargement or reduction as figured from the copy by slide rule.

PRACTICAL BACKEND OF CAMERA

An oversized screen is a component part of the back end (20 in. by 24 in.) with 480 sq. in. area, as is a standard circular screen in rotary screen holder, 15 in. by 18 in., or 270 sq. in. Both screens fit the screen track, permit accurate screen setting to three points for screen distance, and also, being circular screens, permit rotation for the proper screen angle.

The vacuum back is hung down out of the way, ready to be swung up to position when needed. A bracket supports the back in a horizontal position so that the shield for various sizes of paper and film may be adjusted with the photographic material.

A monel metal strip, upon which the wet-plate rests in the camera, is impervious to the action of the silver bath solution, and assures freedom from fumes.

Calibrated readings on the right-hand side and bottom of the camera back enable the operator to adjust the plate holder rack rapidly to any position. The rack includes a device to adjust the position micrometrically from the back end so as to obtain register with a key glass.

The control stand may be moved so that buttons are accessible from any position that may have to be taken by the operator.

Where blow-ups are needed, shooting through from the back onto sensitive material held in the copyboard holder, is recommended by Monotype. This embodies many necessary changes in lighting, and also light prevention methods to prohibit light from reaching the sensitive surface. But because of the ability to move the lensboard into the back so that full bellows compression takes place, combined with the ability to bring the copyboard holder right up with the lensboard so that they may touch in this compressed position, it is possible to produce blow-ups the sizes of which are only confined by the space behind the camera itself. Some shops use a suction holder large enough to hold a 64-in. press-plate, shooting the four-color negatives that size. The holder in this case is fastened to the overhead extension attached to the camera.

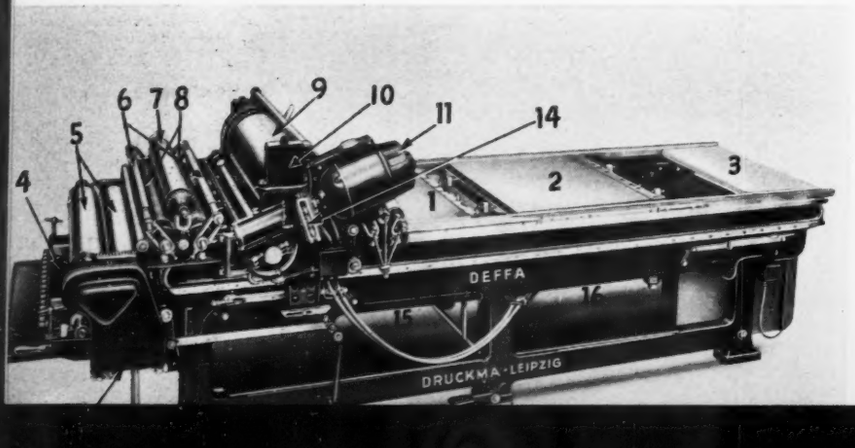
P-Double-E File Nos. 2B2 and 2D2

"Deffa" Flat-Bed Offset Press

The new "Daffa" Flat-Bed Offset Press, offered by Karl Krause—U. S. Corporation, is suitable for printing on a production basis, in one or more colors, a wide variety of materials. Some of the products which can be printed are etched metal name plates, rules, glass and celluloid dials for radios and automobiles, registering and measuring devices, clock dials of glass and heavy gauge metal, multi-color maps, single and multi-color proofs.

As is stated above, the "Deffa" is a flat-bed press, with two adjustable spring mounted beds. There is no limitation to the thickness of the materials it handles, as both beds may be raised or lowered at will by means of a handwheel for each. The offset method of printing

(*Continued on Page 50*)



At Left:
View of "Deffa" Flat-Bed Offset Printing Press for printing upon etched metal name plates, rules, glass and celluloid dials for radios and automobiles, registering and measuring devices, clock dials of glass and heavy gauge metal, multi-color maps, single and multi-color proofs by means of offset, litho stones, rubber, halftone or line plates, type, etc. The component parts are identified as follows: *1*, Adjustable bed for stock upon which design is to be printed; 2, Adjustable bed for holding zinc offset plates or other printing element; 3, Damping bed may be raised or lowered; *4*, Fountain; *5*, Steel oscillating rollers; *6*, Steel rider rollers; *7*, Oscillating steel distributing roller; *8*, Rubber form rollers; *9*, Rubber covered cylinder; *10*, Electric brake; *11*, Motor travels with carriage; *12*, Motor for driving inking system within frame of machine (not visible); *13*, Pedal for opening grippers (a similar pedal on opposite side of machine); *14*, Clutch; *15*, Handwheel (not visible) for raising or lowering stock bed; *16*, Handwheel for raising or lowering zinc offset plates or other printing element.

Matrix and Spaceband Justification on the Intertype

By STAFF ENGINEER*

TWO types of justification mechanisms are applied to Intertype machines, one designed especially for quadding machines and the other for non-quadding machines. The chief difference between the two types of mechanisms is in the arrangement of the vise justification rods and in the position of the vise justification block. The justification block on non-quadding machines rests normally in an inclined position, with its right-hand end higher than its left-hand end.[1] The justification block on quadding machines is inclined in the opposite direction, *i.e.* the left-hand end of the block is higher than the right-hand end when the machine is in normal position. While each mechanism differs from the other in the inclined position of the justification block, the basic operations of both devices are the same. *On both quadding and non-quadding machines, matrix lines are justified by an angular stroke at first justification and by a horizontal stroke at second justification.*

Justification Movements

Non-Quadding Machines. The first upward movement of the justification block is controlled by the justification lever, which operates the right-hand side of the vise justification mechanism. The justification block on non-quadding machines, as stated previously, rests normally in an inclined position, with its right-hand end higher than its left-hand end. When the justification lever rises for the first justification stroke, the justification block is operated only from the right-hand side and consequently is pushed upwards at an angle corresponding to its original inclined position. The spacebands assume this angle at the end of the first justification stroke, *i.e.* those at the right of the line are driven up further than those at the left. The justification lever descends, lowering the justification block and relieving the spacebands from the upward pressure.

There is a definite reason for justifying the line in the manner just described. To begin with, the length of the matrix line is usually shorter than the measure being set—the average line sent in to the casting mechanism may be from one to three ems shorter than its ultimate length on the slug. When the first elevator descends and carries the line between the vise jaws, however, the right-hand end of the line is always presented in a positive position with relation to the right-hand vise jaw. If the casting stroke of the delivery slide is set properly, the last matrix on the right-hand end of the line will be positioned fairly close to the right-hand vise jaw. If the line is two ems shorter than the measure being set, there will be a space of approximately two ems between the left-hand vise jaw and the last matrix at the left-hand end of the line. Since this variation in the length of the matrix line always occurs at the left, the first upward stroke of the justification block must cause the matrices and spacebands to move toward the left-hand vise jaw. The angular (first) stroke of the justification block is designed to facilitate this movement. Since the right-hand end of the block is higher than the left-hand end, the spacebands are pushed up consecutively from the right to the left. The matrices and spacebands are thereby moved toward the left as each spaceband is pushed up by the block.

The second upward movement of the justification block is controlled by the vise closing lever and the justification lever, which lift the vise justification mechanism on both sides. The position of the vise justification block during second justification is regulated by an exact timing of the action of the two levers as provided by the cams. After the matrix line has been aligned vertically and facewise, the vise closing lever rises, closing the left-hand vise jaw. The lever continues its upward movement and raises the left-hand end of the justification block until the block assumes a horizontal position. Then the justification lever and

(*Continued on Page 45*)

*Engineering Department, Intertype Corporation, Brooklyn, N. Y.
[1]All mechanisms referred to are being viewed from the front of the machine.

Matrix Contrast Corporation's Executive and Service Personnel Meet at Home Office in New York

The first annual meeting of the executive and service personnel of Matrix Contrast Corporation was held at the home office, New York, on Thursday, December 23 last. Excepting Charles Hubbard who is in charge of the Corporation's London (Eng.) station, all of the service crew managers attended along with some of the helpers.

In the illustration shown here which was taken at the meeting the personnel is identified as follows:

Standing, left to right—Arthur D. McClary (Crew Manager), George W. Allan, Assistant to President Gerald W. Hunter (Manager of Service and Salesman), Clifford J. Martz (Manager, Chicago Station), Ira B Fowler (Crew Manager), Willis G. Hunter (Crew Manager), Joseph Mason (Crew Manager), David Beesley, George W. Duerback, Henry H. Curlander (Manager, New York Station), Assistant to President Richard M. Seymour (Salesman), Secretary-Treasurer Clifford Yewdall and Vice President Charles H. Stout.

Seated, left to right— Walden D. Mishler (Crew Manager), Pauline Lando, Mary Tiedemann, Viola Zierau, Muriel Reid, Ellen Burns and President Lon. S. Landers.

Standards

For modern lighting in the printing plant discussed—Uniformly distributed light essential for seeing tasks in mechanical departments

By STAFF WRITER

PART I

TODAY, modernization of the printing plant for higher standards of quality and greater productive efficiency cannot be limited to new presses, new typesetting equipment and the like. The human problem is receiving increasing emphasis. Improvements in working conditions which make for human well-being and relieve the nervous tension associated with fatigue are now regarded as basic factors in any thorough modernization program. Among such improvements, a lighting installation which provides a sight-saving illumination level for every critical seeing task is perhaps first in importance.

Not Subject to Strict Standardization

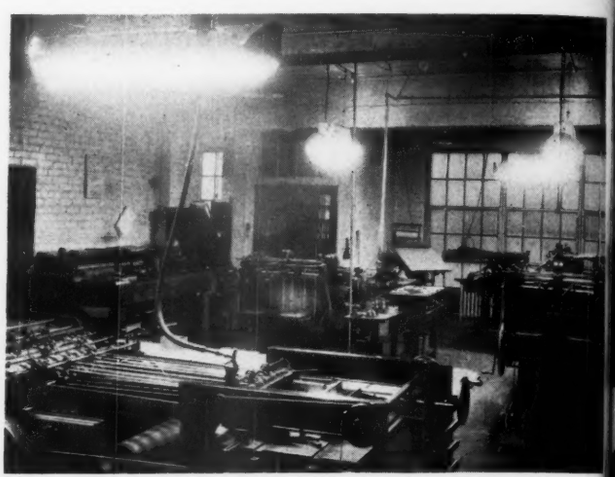
Unlike other production tools, good lighting is not subject to strict standardization. The different types of work, equipment, operating schedules, and various size plant layouts make any attempt at standardization impractical and ineffective. Although the level of illumination is probably the most important single factor in planning a lighting system, good lighting cannot be assured simply by an adequate quantity of light as measured in foot-candles. Even windows which flood a room with natural daylight, for example, may produce poor seeing conditions for certain tasks. Sometimes a rearrangement of equipment or a relocating of lighting units can do more to benefit good seeing than any increase in the quantity of light. More often, a well-balanced attack on the problem, considering the quantity, quality and distribution of light best for each type of seeing task, is the only sound procedure.

At a frame, composing stone or press directly adjacent to a large window, bright daylight may furnish an illumination level as high as 300 foot-candles on the work. Ordinarily, the level will range from 20 to 100 foot-candles on bright days. While these levels seldom exist more than a few hours a day, three or four days a week, the extra comfort and efficiency made possible when they do, gives a measure of the value of good seeing, both night and day.

In the composing room of Stevenson and Foster, Pittsburgh, Pa., 20 combination Cooper Hewitt-incandescent lamps with diffusers are used. Placed directly over the frames and composing stones, these units provide pleasant detail-revealing illumination for the handling of type.

Composition Work a Typical Seeing Task

If we accept general composing work as a typical seeing task in the shop, 20 to 30 foot-candles on the working plane is certainly a conservative minimum for the quantity of illumination required, based on widely recognized visibility tests. Actually, no rigid minimum can be established. At the Harvard University Press, for example, a visibility meter test by several of the employees showed that 40 foot-candles was a desirable level for paging and correcting work. For hand-setting type over a considerable period of time, a level of 50 foot-candles is undoubtedly desirable to avoid fatigue, provided the lighting is of a type which eliminates glare.



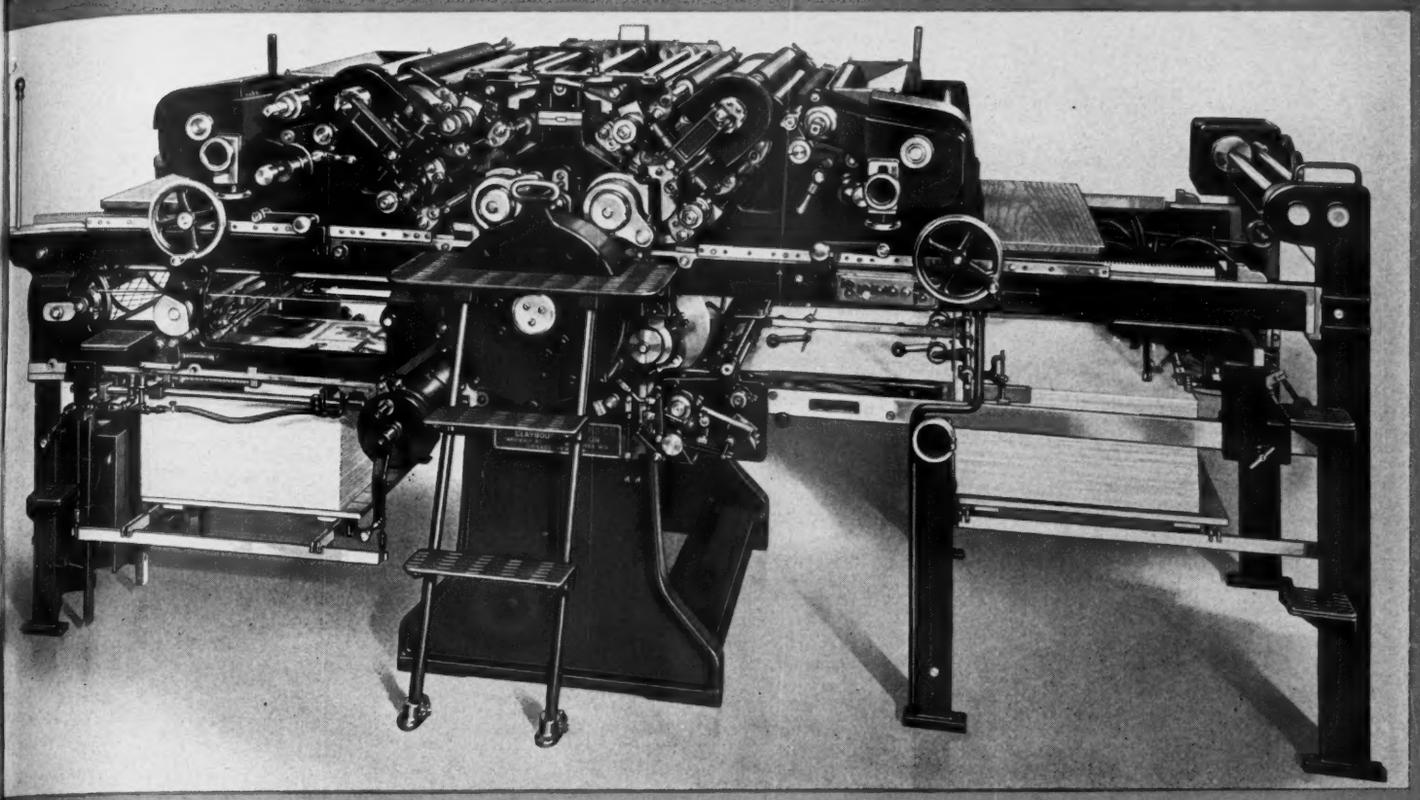
"Skylight" units at the Sedgwick Printing Company, Martins Ferry, Ohio, provide a uniform "daylight" in the pressroom. Although the shop has large windows, a skylight and aluminum painted walls and ceiling, the new lighting installation has proved beneficial in furnishing constant and even light of daylight characteristics to enable the pressman to watch detail and color.

Uniformly Distributed Light Essential

Concentrated light sources, such as drop lamps or bracket lamps, will cause reflected glare from bright type metal. Today most plants require a uniformly distributed light, which will penetrate to the base of the type characters and which is free from dense shadows. Even though actual skylights are not generally available because of the added building costs, heating and maintenance expense common to this type of construction, the present ideal in plant lighting is to match artificially the seeing conditions which exist below a large skylight. The important characteristics of such

(*Continued on Page 47*)

OOD NEWS FOR PROFIT-MINDED PRINTERS



COTTRELL ☆

two-color rotary press

	Maximum Sheet	Minimum Sheet
Small Unit	27 x 28	11 x 17
Large Unit	28 x 42	19 x 26

eed on first-quality printing, 5000 two-color sheets r hour.

tomatic stream feeder. Automatic plate cylinder trip.

aybourn spirally grooved cylinders. Claybourn rapid ister-hook system.

roll-back—quick fountain adjustments. All adjust- nts accessible from floor. All rollers interchangeable.

Remarkable ink distribution and simplicity of operation.

Highly efficient on moderate-length as well as long runs. With the perfected curved plates which are now easily obtainable, makeready is practically eliminated.

Four-color process work can be printed on these presses in accurate register at high speed.

The installation of one or a pair of these units will enable commercial printers to meet the competition of any printing process. The average printer can now avail himself of all the economies effected by large edition printers.

☆

C. B. COTTRELL & SONS CO., WESTERLY, R. I.

NEW YORK: 25 East 26th St. • CHICAGO: 332 South Michigan Ave.
CLAYBOURN DIVISION: 3713 North Humboldt Ave., MILWAUKEE, WIS.
SMYTH-HORNE, Ltd., 1-3, Baldwins Pl., Gray's Inn Road, LONDON, E. C. 1

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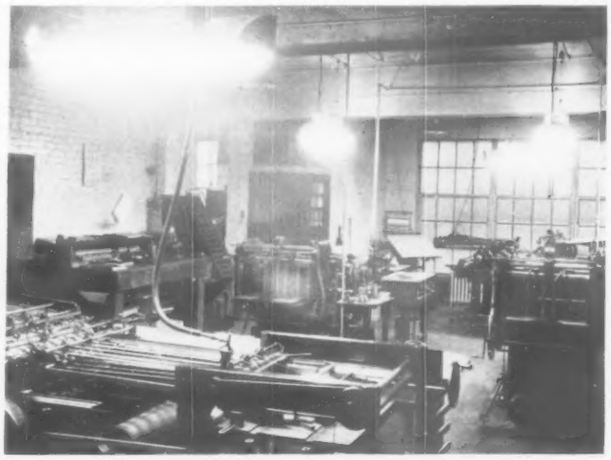

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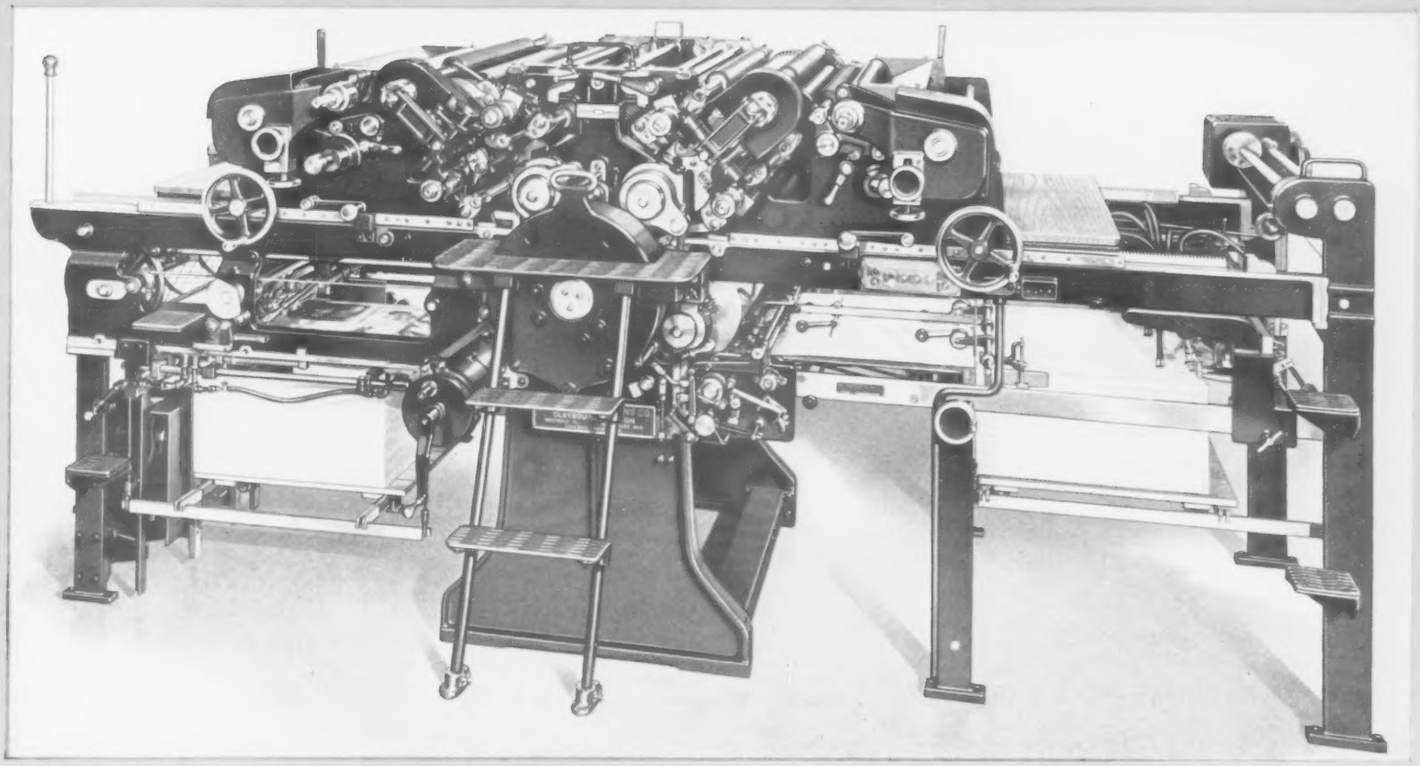
(*Continued on Page 47*)

GOOD NEWS FOR PROFIT-MINDED PRINTERS



COTTRELL

two-color rotary press

	Maximum Sheet	Minimum Sheet
Small Unit	27 x 28	11 x 17
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Speed on first-quality printing, 5000 two-color sheets per hour.

Automatic stream feeder. Automatic plate cylinder trip.

Claybourn spirally grooved cylinders. Claybourn rapid register-hook system.

Ink roll-back—quick fountain adjustments. All adjustments accessible from floor. All rollers interchangeable.

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Tracing Causes

Of metal troubles in zinc plates—Analyses made especially for the benefit of photo-engraving executives

By LABORATORY STAFF*

II

THE effect of crystallization on etching properties is illustrated in Fig. 6. In any zinc, all crystals do not etch at the same rate. If the crystals are small, the resulting roughness is slight. If they are large, the faster etching of some crystals may form hollows, against whose walls dragons blood may be banked.

In addition, overheating causes growth not only of the crystals themselves but also of the particles of undissolved alloying elements within the crystals. These larger particles, etching slower than the surrounding crystal, will stand out in relief until etching proceeds to the point where the particle is undermined and washed away, forming a small crater. Either the projecting particle or the crater that it leaves may be large enough, as a result of overheating, to hold dragon's blood.

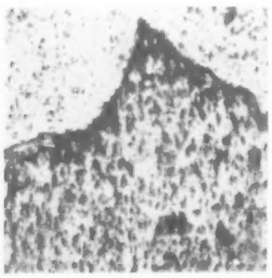


Fig. 6.—Photo-engravers' zinc overheated in burning-in, Scleroscope hardness of 18, originally 25. This metal was etched in 10% nitric acid. The photograph illustrates roughness of etch resulting from overheating. Magnified 200 times.

In Fig. 6, dragons blood is shown held by the vertical walls of the hollow formed by a fast etching crystal, by particles standing out in relief and by craters formed by undermining of such particles. Fig. 7 shows the much smaller crystals and smoother etch resulting from even, and prolonged heating at low burning-in temperatures.

Since under extreme conditions much worse roughness can result than is shown in Fig. 6, the need for care during burning-in is obvious.

Overheating Weakens Zinc

Another undesirable result of overheating is a deterioration in mechanical properties. An overheated plate is soft, has little strength and is brittle. In the worst cases, overheated plates can easily be broken by hand. Consequently, in any subsequent operation such as molding stereotype mats, an overheated plate may crack. Similarly, in direct printing, an overheated plate is much more likely to crack as a result of uneven printing pressures or improper press adjustment.

Stretching

As previously stated, this trouble arises in the burning-in operation and is due to differences in the amount of permanent expansion which the plates undergo while being heated. For color work, exact registration is necessary and unfortunately, on large flats, is difficult to obtain. The difference in expansion of the different color plates is usually blamed on differences in composition or original temper of the zinc. This might possibly be true but is highly improbable if both plates are from sheets manufactured for photo-engraving purposes by the same rolling mill.

Assuming that the plates are of proper engravers' quality, differences in stretch are probably due to differences in burning-in times and temperatures. Above about 200-300 deg. F., the amount of stretch is greater for longer heating times and higher temperatures, although the increase in stretch is not in proportion to the time and temperature. Some stretch will occur during burning-in, even when this is done carefully enough to prevent appreciable crystallization and softening of the metal. For example, the metal shown in Fig. 7 suffered no loss in hardness and barely started to crystallize, but it underwent a stretch of 0.0003 in. per inch.

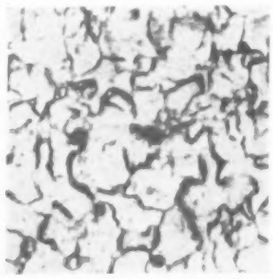


Fig. 7.—Photo-engravers' zinc annealed ½ hour at 275 deg. F. Scleroscope hardness 25, same as before annealing. Etched in 10% nitric acid. Showing small crystals and relative smoothness of etch resulting from even and prolonged heating at correct burning-in temperatures. Magnified 200 times.

Accordingly, the problem is not one of preventing stretch but of keeping it uniform. One method is to keep the total stretch low, by keeping the burning-in temperature and time as low, and of course as equal, as possible. Another method is to preheat the plate, even before sensitizing it, to a temperature equal to or slightly in excess of that necessary for subsequent burning-in. In this way most of the stretch is produced at a time when it causes no trouble, and later burning-in between etching operations will cause little further stretch, with negligible differences in stretch of companion plates. Some etchers find slow cooling with air and not water produces a more uniform amount of stretch than does the usual quenching procedure.

Color jobs should always be printed with the rolling grain of the zinc running in the same direction on each plate, since the amount of stretch is not the same with and across the grain.*

An added precaution sometimes taken to keep stretch uniform, when using an electric burning-in oven, is to have as many color plates on the same zinc sheet as possible. The theory is that since the entire sheet is heated uniformly in these ovens, this procedure eliminates the only other variable, slight variations in burning-in time.

When using the usual type of gas stove for burning-in, it must be emphasized that even the best of zinc alloys or the best of preliminary treatments are not a complete insurance against the effect of a few seconds inattention and subsequent overheating. When an electric oven is used for burning-in, the problem is reduced to that of heating all the plates for the same length of time. With such an oven trouble with poor register is rarely encountered.

Warping

Zinc sheets, when warm, can be flattened readily at the mill by piling them on a plane surface, and placing a load on another plane surface on top of the pile. There should be no excuse, therefore, for a wavy surface on sheets delivered for engraving purposes.

In the burning-in process even flat sheets may warp over the entire length or buckle locally. On the softer zincs, this is not important since the sheet can be flattened readily by hand. However, tough zincs are too springy to allow this when cold, so that a means of preventing or curing warping is desirable. Properly conditioned engravers' zinc, soft or hard, will not warp unless unevenly heated or overheated. This was indicated by laboratory experiments and is proved in practice by the absence of warping on sheets burned-in in the electric oven. Accordingly, the best means of preventing warping is to prevent local or general overheating.

Special cooler presses are in use to remove the warping resulting from the unavoidable occasional uneven heating or overheating by the gas burning-in stove. With this press the warped plate is flattened by heating it to about 200 deg. F. and holding it under pressure for about a half minute. Where such a press is not available, tough plates are usually flattened by hand after the last burning-in, but before they have been cooled, or they may be allowed to cool slowly on a plane surface under pressure which avoids any trouble.

Shrinkage

In the stereotyping process it has been reported that in certain instances in direct pressure molding, zinc undergoes a shrinkage when a large number of mats are molded from the same zinc etching, as in syndicated four-

*Abstracted from booklet *Getting Down to Zinc Facts*, published by Atlantic Zinc Works, Brooklyn, N. Y. Printed by permission of the publishers.

**Rolling grain may be determined by observing the back of the plate.*

color comic supplements. Exhaustive investigations finally revealed that the trouble was mechanical and not the fault of the zinc.

In the process, the mat is molded and dried against the zinc plate under heat and pressure. The pressure clamps the cool plate, keeping it from expanding in length or width when it is heated. Since it can not expand horizontally, the resulting stresses relieve themselves by thickening the plate. As a result the plate has the same length and width when heated as it had originally at room temperature. When the pressure is released and the plate is allowed to cool, the normal thermal contraction of the plate on cooling makes it slightly smaller at room temperature than it was originally. Repetitions of the same cycle cause further "shrinkage," really compression, until noticeably poor register results.

On the basis of this theory, one newspaper plant tried steam-heating (to about 175-200 deg. F.) the press surface on which the plates rest while under pressure. The plate was heated on this surface before and during stereotyping, and as a result trouble with shrinkage was entirely eliminated. Since then other plants have cured this shrinkage trouble in the same way, using either steam or electric heaters.

Toughness, Not Hardness, is Important

A common belief among engravers is that a plate which doesn't bend easily and rings "hard" simply must be slow etching. This belief at one time had a real basis of fact, since the elements added to zinc in early days to produce a stiff, tough photo-engravers' plate also resulted in a loss of etching speed.

Etching speed is due to a chemical reaction; hardness or toughness is due to physical properties of the plate. Glass is "hard" yet it etches easily with a proper reagent such as hydrofluoric acid. In the photo-engraving industry the only measure of toughness should be the resistance to wear in the printing process or in multiple stereotype mat making.

As a side-issue it is interesting to note that when two plates of the same composition are rolled to different hardnesses, the harder one will actually etch slightly faster than the softer one. However, the difference is too slight to be detected except with special laboratory instruments.

In the photo-engraving industry, temper-hardness means nothing. Toughness, however, is extremely important. Where printing is done directly from the zinc plate toughness decides the number of impressions which can be made before the zinc wears away enough to cause blurring of the image.

To compare the rate of wear of two zincs the engraver should place them side by side in the same press, bearing the same image if possible, and keep printing from them until one shows a blurring of the printing due to wear.

Gauge

Zinc sheets for photo-engraving are manufactured in two standard thicknesses, known respectively as "16 gauge" and "11 point" (11/72 in.). Other gauges are usually rolled ot order.

Sixteen gauge metal, or more correctly, "16 Stub's gauge," (Corresponding to 0.065 in. thick) is most generally used. While it is desirable that this thickness be adhered to exactly, it is impossible to grind each sheet to such exactness, so a variation of as much as 0.002 in. below standard is usually acceptable.

Contrary to the general impression, it is relatively easy for a manufacturer to meet exacting specifications calling for "thin" or "heavy" sheets, slightly under or over standard gauge, because each sheet is measured for gauge and those which, due to variations in grinding, fall under 0.063 in. or over 0.065 in. are set aside and kept for engravers desiring extra heavy or light sheets.

Complaints about gauge usually are caused by the failure of the engraver to specify the *exact* thickness he needs. Before ordering metal, he should use a micrometer to determine the exact thickness, to the nearest thousandth of an inch, which best fits his particular requirements. Then in ordering he should specify 0.063 in.—0.065 in., or 0.065 in.—0.067 in., as the case may be, instead of just "16 gauge."

The most serious difficulty encountered by photo-engravers on the gauge question is when they combine zinc and copper cuts on the same base. No engraver should start a combination job without first measuring both the zinc and copper plates with a micrometer to be sure they are the same thickness. To prevent differences in thickness, both the zinc and copper plates should be ordered in the exact thickness in thousandths required.

A very good way to check accuracy of gauge, where an ideal thickness has been determined by micrometer, is to weigh each sheet. For instance, if one 16 gauge sheet weighs 6.4 lbs. and another 6.6 lbs., then the second should be 0.002 in. thicker than the first. The weight of a cubic inch of any make of photo-engravers' zinc is the same, as variations in weight mean variations in thickness.

Even though blocked plates may be planed to correct any excess over type high, it is desirable that all metal be as close to standard as possible so that when plates from separate sheets are blocked together, their surfaces will be in the same plane. To assure this very heavy rolls are used in engraver's zinc and copper mills, but in spite of this the bending of the rolls under pressure, when rolling extra wide sheets, may cause plates to be 0.001 in. thicker at the center than at the edge, so it is desirable to use sheets rolled as narrow as possible for combination jobs.

Mechanical Defects

Various minor mechanical defects occasionally appear in photo-engravers' sheets. Each type is rare but there are so many possible types that it would be impossible to discuss each one in full here. However, the most common can be touched upon briefly.

Blisters on the sheet, scale, seams, rolled-in dirt holes, and pits are metal defects produced by errors in processing by the plate manufacturer.

Rough handling may result in surface scratches, bending, dirty surfaces, etc. Such handling may later cause trouble in the etching or other steps in the engraving process.

After being ground, the sheets may be piled on top of one another without thorough cleaning. The particles of grinding pumice get pressed into the sheets by the weight of sheets above. Pinpoint roughnesses result, or after etching the particles may drop out, leaving a hole. Such particles are easily identified in examination under a reading glass.

Sheets splashed with water or kept in storage in a damp atmosphere will corrode. The resulting dull appearance can sometimes be removed by rubbing with the fine pumice used in cleaning the sheet before applying the emulsion. Care should be taken not to subject zinc sheets to sudden temperature changes in humid weather, as sweating may result.

Defects in the half-tone screen, wrinkles in the photographic film when the image is being transferred to the zinc sheet, dirt in the emulsion on the zinc, stains on the photographic film, etc., are bound to be reproduced on the zinc sheet.

Printing Failures

All metals are subject to fatigue under repeated strain. Slamming from an improperly adjusted press will set up such a condition which will eventually crack the best of plates.

Naturally, any plate weakened by severe overheating in burning-in will be more sensitive to faulty press work than one properly burned-in. However, normal slight variations in burning-in will never be the real reason for cracking since many printers have stated that they have never had a cracked plate in up to 15 years of experience.

During printing, the surface of the sheet may change from flat to wavy. This is caused by insufficient protection of the back of the sheet during etching. The resist breaks down locally, allowing the back to be etched slightly, resulting in slight hollows. Under printing pressure these hollows are forced out against the supporting surface, leaving corresponding hollows in the printing surface above. Such trouble should never occur with Backote plates.

The End

QUARTER-CENTURY DINNER

On December 22, at Hotel Bossert, Brooklyn, President Becker of Intertype Corporation gave a dinner to all employees who have been helping to build Intertype machines for twenty-five years or more. Each member of the twenty-five year group was decorated by the President with an emblem of twenty-five years continuous service and was presented with a sum of money.

The group, twenty-four in number, listed in sequence of employment, were: Miss Laura Wilkens, forewoman matrix department; G. J. Niederehe, Asst. chief draftsman; D. L. Anderson, Asst. chief engineer; W. J. Curran, inspector; E. M. Goodbody, Asst. chief experimentalist; F. E. Barber, chief inspector; M. W. Sutter, foreman; S. E. Sperry, chief experimentalist; J. W. Schuh, service manager; H. R. Freund, chief engineer; L. Lawall, grinder; J. Sutter, inspector; H. Moore, inspector; E. Schussler, quality manager; W. E. Ritter, foreman; G. Herbute, toolmaker; A. P. Dalton, foreman; T. Fox, benchman; G. Schilpeit, grinder; J. J. Ruckh, foreman; G. J. Mihm, inspector; W. C. Lund, manager Eastern service division; B. H. Smyle, Asst. foreman; H. K. Wolf, accountant.

Also present were: Vice Presidents Mann, Peterson and Willnus, Treasurer Grube, Assistant Secretary-Treasurer Hoffman, C. E. Bittner, Works Manager, and J. E. McConnell, Personnel Manager.

PRESS FOR VANCOUVER SUN

Shipment of new press equipment for the Vancouver (B. C.) *Sun* has been completed by The Goss Printing Press Co., Chicago. The total installation will comprise five Goss High Speed Anti-Friction Units and one pair of folders with double roll stands and Goss Automatic Tensions.

This press is capable of printing up to 40 pages in two sections, running straight, at a maximum speed of 50,000 pages per hour, and above 40 pages, up to 80 pages, collecting, at a maximum speed of 25,000 papers per hour.

It is expected that the new press will be ready for operation the latter part of this month.

Square Stop

Diaphragm control produces round dots in halftone plates

OTTO LANGE, photoengraving superintendent, and George Spicer, chief maintenance machinist of the Cleveland *News*, have collaborated in the development of a square stop diaphragm control, synchronized with Douthitt System for attachment to newspaper photoengraving cameras. By means of the new square stop diaphragm control it is possible to obtain a round dot structure in halftone plates and a halftone negative with round dots in the highlights instead of the conventional square dot.

Mr. Lange explains the new diaphragm control attaches to the front end of the camera lens barrel without in any way interfering with operation of the Douthitt control as already installed in the lens mounting. After the square stop control has been applied, either the Douthitt System or the new square stop diaphragm control may be used without inconvenience to the operator.

The square stop diaphragm control consists of a round, disk-like brass casing with light aperture in the center. A pointer similar to that used in the Douthitt System is mounted at the top of the casing. Two steel plates within the casing and having right-angle cut out sections reciprocate to form a square opening instead of the usual round opening when the casing is manipulated by the operator.

A primary object in newspaper halftone engraving is to hold detail and at the same time secure as contrasty a negative as possible. The square diaphragm, Mr. Lange states, makes it possible to secure much larger round highlight dots, without the dots being connected. The new method of controlling the square stop, according to Mr. Lange, has two separate and distinct advantages in newspaper photo-engraving. First of these is a combination of speed and facility to the etcher. The second advantage of the larger round dot is a tendency to allow for a deeper first bite and better printing qualities in the middletones and shadows. It also allows the operator to pick up much more detail in the blacks.

New Reader Service

Commencing with this month's issue, *Printing* EQUIPMENT *Engineer* is providing a new service for our readers. A post card insert will be found next to inside back cover. If you desire information about equipment or supplies or wish to secure technical literature mentioned in the numbered paragraphs on the insert just check off the number or numbers to be found on the postcard and mail it to us. We will transmit your request to the manufacturer. Frankly, in addition to performing a service for you, we wish to be as useful as possible to our advertisers.

Square stop diaphragm control produces greater contrast in newspaper photo-engraving

Here are shown two halftone views of the same subject reproduced same size from a 75-line halftone slightly more than twice enlarged to show dot structure on one zinc plate. The subject at the left was photographed with a conventional round diaphragm and the one at the right with a new square-stop diaphragm devised jointly by Otto Lange, photo-engraving superintendent and George Spicer, chief maintenance machinist at the Cleveland *News*.

BIG NEWS!

Two Improved Single Distributor Linotypes

Have grown out of Models Eight and Fourteen

LINOTYPE

NEW MECHANICAL ACHIEVEMENTS

Join with famous Blue Streak features to provide the

SMOOTHEST PERFORMANCE
EASIEST OPERATION
AND GREATEST FLEXIBILITY

ever attained on any Single Distributor Machines

Do you want variety of faces? These Master Models give you up to four main magazines, plus up to four auxiliaries on the Model 32.

Do you want these faces immediately available? Only one easy turn is required to shift magazines.

Do you want to quickly replace these magazines with others? Improved in-built quick-change mechanism gives new speed to magazine changes. Even the bottom magazine is easily changed.

Do you want a Linotype that can set display as well as text? The Two-in-One Master Models offer you any combination of 72- and 90-channel magazines, and you can re-group them at will to suit the flow of your work.

Do you want faster production? Study the many operating conveniences that save minutes and seconds all along the line.

Do you want to reduce "down" time? The practical man will appreciate the significance of the many improvements that have been made to facilitate adjustments, cleaning and inspection. The plant machinist who goes over these machines in detail will give expert testimony to their ease of maintenance.

MASTER 31 MODEL

TRADE LINOTYPE MARK

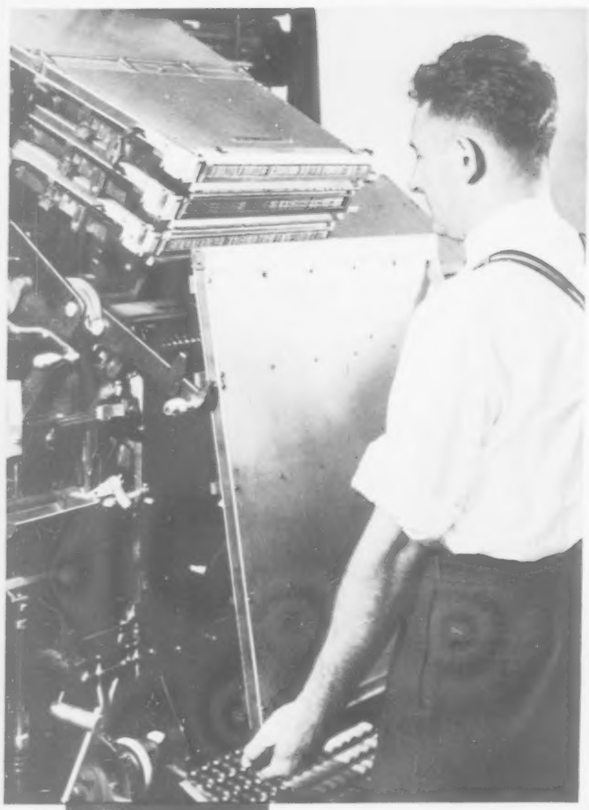
LINOTYPE BLUE STREAK MASTER MODELS

MASTER 32 MODEL

TRADE LINOTYPE MARK

QUICK, SAFE, EASY CHANGE of Magazines From Any Position

Look how easy it is to remove a magazine from one of the new Master Models. The operator merely allows the magazine to slide forward on a rigid track. The magazine's weight is thus carried by the changing mechanism, not by the operator.



After the magazine is clear of the machine, it pivots as shown at left. Now the operator can lift it in the easiest, most convenient manner. Linolite magazines, being 22 pounds lighter than brass magazines, are easily handled.

The "Stomach Lift," necessary when magazines must be removed on same angle as they operate. It is awkward; may cause dangerous strain.

The Vertical Lift on Blue Streak Linotypes. All magazines pivot into vertical position before they are lifted. It is the convenient, natural, easy way.

Above is pictured the new Master Model 31 with 4-magazine equipment

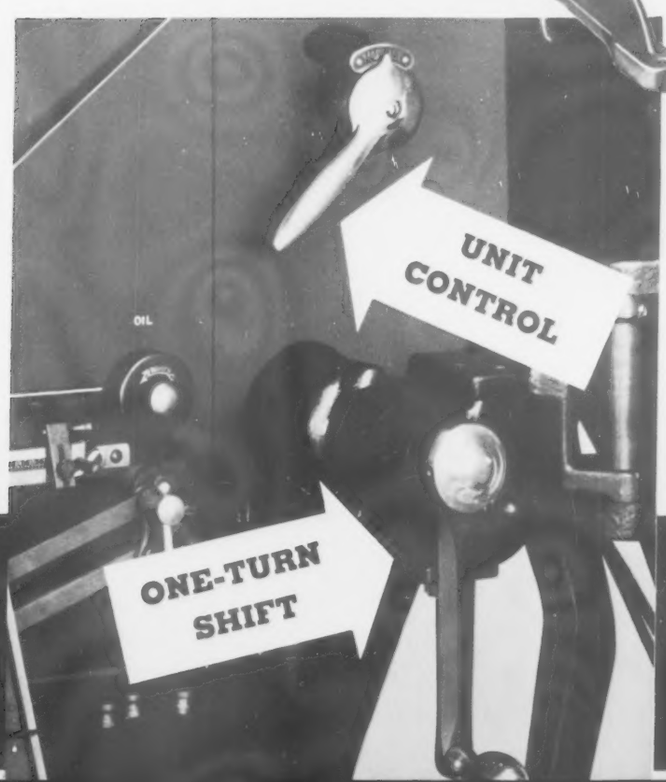
MASTER 31 MODEL

TRADE LINOTYPE MARK

MASTER 32 MODEL

This is the 8-magazine Master Model 32. 2-in-1 type illustrated.

THE BLUE STREAK LINOTYPES



Linotype Master Model 31 has a capacity of up to four main magazines. Model 32 can carry up to four main magazines PLUS four auxiliary magazines.

Both embody the famous One-Turn Shift which makes it just a single effortless turn from any magazine to the next. On the Master 32 this shift action is directed to either main or auxiliary magazines by the Unit Control *(shown at left)*.

TRADE LINOTYPE MARK

IT'S ON THE 2-IN-1 MASTER MODELS

CHANNEL CHOOSER

for varying display-text ratios

THE BLUE STREAK LINOTYPES

On 2-in-1 Master Models, the arrangement of 72- and 90-channel magazines may be readily changed to fit differing requirements. You may put on the combination best suited for immediate needs . . . then change at any time to suit the flow of your work.

Channel Chooser permits you to vary the ratio of 72-channel and 90-channel magazines as desired. There may be three 90's and one 72 . . . or two 90's and two 72's . . . or one 90 and three 72's.

—and Changing Relative Positions

Not only can you vary the *number* of display and text magazines, but you can change their *relative positions*. They may be arranged in whatever manner is most convenient for speedy operation. The combinations may be:

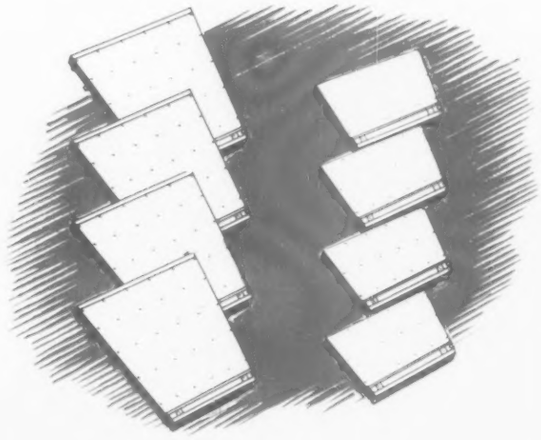
72	90	72	90
90	72	90	90
72	90	90	90
90	90	90	72

90	90	72	72
90	72	72	72
72	72	72	90

72	72	90	90
72	90	90	72
90	72	72	90
72	72	90	72

As you turn the One-Turn Shift, the reed mechanism automatically changes to suit the magazine brought into operating position. And, of course, on the Model 32 these combinations of text and display are supplemented by 4, 3, 2, or 1 wide auxiliary magazines for additional display.

TRADE LINOTYPE MARK



- *Pick Out Any Four*
- *Arrange Them to Suit*
- *The Channel Chooser Does the Rest*

Mergenthaler Linotype Company

BROOKLYN, NEW YORK

NEW YORK CITY · SAN FRANCISCO · CHICAGO · NEW ORLEANS

CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

Silk Screen

Another string for printer's bow—Use of the process is growing—Manipulating technique explained in detail.

Told to STAFF WRITER *by* BERT ZAHN*

I.

WHILE stencil printing was practiced in antiquity, notably in Egypt, China and Japan the use of a screen with the process is a modern innovation, suggested by the Japanese experiment with threads of silk in the old stencils, the next step being a screen. The screen process is growing in popularity because small and medium orders may be filled without the expense of layout and plates. Unlike letterpress, offset or gravure, the screen process may be used to decorate thick materials and on certain surfaces a better decoration is obtainable by the screen than by the processes employing printing presses. By the screen process it is also possible to apply a much thicker layer of color than the printing press film.

Fig. 1.—The silk screen stencil is made of seasoned wood in various styles. In the simplest form the silk is attached to the side of the frame or base, *i.e.*, the side which rests upon the operating table. In this style, the fabric is fastened to the frame by means of tacks, but grooves and strips hold the screen better.

A single-color job can be run by one man at the rate of 300 impressions per hour up to a size about 22 in. by 28 in. Above this size two operators are required but the production speed is about the same. Many experienced operators run up to 450 and 500 per hour. Each color naturally means a separate run and must be figured accordingly. Screens hold up according to the use to which they are put. Photo or carbon tissue screens hold up from 1000 to 10,000 impressions before needing to be touched up. Film coated screens hold up for any amount of impressions up to 25,000 depending upon the care exercised in running and cleaning the screen.

Equipment

The important units are a well-built, strong, smooth top table of ample size for sheets to be decorated. The table top should be seasoned tongue and groove wood. The hinge support should be a strip of wood of the same thickness as the stencil frame and may be stationary or movable by drilling holes in the table top, parallel to each other and spaced a few inches apart, so that the stencil frame may be moved as the work in hand may require.

Many shops use a base on the table top large enough for the largest sheets handled and made of kiln-dried cypress laminated in at least two layers.

The stencil frame is made of seasoned wood in various styles. The simplest has the silk attached to the side of the frame next to the base or table with tacks (shown in Fig. 1.) but grooves and strips hold the screen better. A floating bar is placed in one end of the frame, parallel to the shorter dimension and fitted with groove and strip to hold the screen. The bar is adjustable forward and backward by means of bolts running through it and the end of the frame, fitted with thumb screws (illustrated in Fig. 2.) For easy register on multicolor work the frame may be fitted with four floating bars, one parallel to each side of the frame and secured like the single bar.

The screen may expand or contract with atmospheric changes and the various adjustments of the four floating bars are designed to take care of the distortion of the screen to a great extent.

Hardwood pegs in the groove side of the frame fit into the base or table by means of holes drilled to prevent shifting of the frame even if the hinges are loose. The frame may be fitted with an automatic arm or frame holder (as shown in Fig. 3.) to hold the frame up when sheets are being inserted and removed. The frame may be fitted with a handle or counterbalanced with weights, controlled with a snap catch and foot lever.

The Screen

The screen may be organdy, silk bolting cloth such as is used in flour mills, wire screen, etc. Organdy is commonly used to make paper mask stencils. The superiority of wire screen in durability and comparative freedom from the distortion due to atmospheric changes is evident. Silk bolting cloth, size 13XX, is generally used. It has about 188 meshes to the square inch. Some

(*Continued on Page 42*)

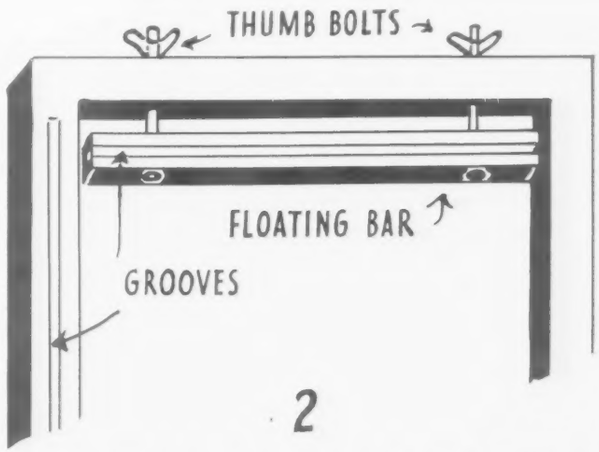


Fig. 2.—A floating bar is placed in one end of the silk screen frame. The bar is parallel to the shorter dimension and is fitted with groove and strip to hold the screen. The bar is adjustable. Two thumb screws running through the bar and frame provide for adjusting the silk screen to proper tautness.

*Sales Manager, Graphic Arts Finishes, The Sherwin-Williams Company, Cleveland, Ohio. Mr. Zahn is the author of a book in which all details of the process are fully explained. Copies of the book entitled *Silk Screen Methods of Reproduction*, may be obtained from *Printing* Equipment *Engineer*. Price $3.00 per copy, cash with order.

Fundamentals

This executive believes in sticking to that which is proved good in newspaper plate making until better methods are positively evident

By MALCOLM BRUCE

OVER a century ago, when stereotyping was in the early stages of development, the leaders of the experiments and many hundreds of their followers of real ability burned some midnight oil and labored diligently for years to learn just what mixtures of metals, degrees of metal heat for casting and kinds of matrix papers and face would produce the best plates. These men eventually sifted out the bad and retained the good ideas which brought the "art of stereotyping" down to certain fundamentals.

It was found that the best and most reliable results were obtained in plate making when they followed these basic principles: Approximately 15% antimony, 5% to 6% tin and the balance lead for body; casting the plates at 550 deg. of metal heat and using matrix papers with smooth but not too hard or glossy face. From that point on plates were cast with those basic ideas and with every success that was ever obtained. Of course, there were some improvements in papers, paste formulas and in the machinery for molding, but those three principles have remained good down to this late date.

One of the largest newspaper machinery manufacturers has had the word "Cast at 550" molded in large 2 in. letters on his metal furnaces for over 40 years—a warning that excessive metal heat separates metal and destroys its value. When the stereotype metal was kept in the proper mixture and casting of plates was done at the proper metal heat, in main not exceeding 600 deg., little trouble was experienced in securing good plates with smooth, solid faces which would print black without excessive use of printing ink, offsetting or filling the bowls of small type. Also, when plates were cast under these specific conditions, little trouble was experienced in securing plates free from frosted faces and weakening air holes or honeycombed body. Such plates were solid and considered safe for presses at any speeds.

Then came the dry mats, and with them the usual noble and otherwise experiments to determine the better process and progress, all of which were commendable. However, some of these experimenters, during the early stages of development, unintentionally deviated from the foregoing known fundamentals, in that their products caused or forced stereotypers to cast the plates at varying degrees of metal heat much above the basic 550 deg. Many of the younger generation of stereotypers, who had never worked under the old wet mat days, gradually got into the habit of casting plates at temperatures far above even 600 deg. All of this has resulted in expensive waste of good metal, especially the tin, and the producing of frosted or porous plates which caused poor or gray printing, or the excessive use of ink in the effort to obtain blacks, which in turn brought on unnecessary offsetting and show-through. Some mats required too much molding pressure to secure sufficient depth of cut screens and bowls of small type for clear printing. This excessive pressure also resulted in broken-down rules, borders, type and bases, rendering them unfit for later editions. Some mats caused "chills" unless plates were cast at excessive metal heat. Other mats were so constructed that they required too much time to scorch them, thus causing costly delays in going to press—an important factor since news values

(*Continued on Page 44*)

Says Industry Is Optimistic

By ORTON B. BROWN*

THE YEAR ended in the pulp and paper industry with a sharp recession in volume, after achieving all-time highs in both production and shipments. Prices, though not back to levels prevailing in 1926, were well advanced from depression lows permitting most companies to obtain reasonable profits for their year's efforts.

Bleached sulphite pulp, as of the middle of December, was about $70 a ton, compared with a 1932 low of $42 a ton and a 1926-27 high of $84 a ton. Newsprint prices have been set at about $50 a ton for 1938 compared with $42.50 last year. Though below the $62 a ton obtained in 1929, the new price should permit profitable operations and yet not place any undue burden upon publishers.

Newsprint output in the United States and Canada reached approximately 4,560,000 tons in 1937 compared with 4,113,000 tons in 1936, 2,923,000 tons in 1932, and a former peak of 4,121,000 tons in 1929.

Repetition of last year's record volume in 1938 will depend upon when general industrial activity revives from current depressed levels, but pulp and paper manufacturers nevertheless face the new year with considerable optimism.

The expansion that has occurred in plant capacity of the industry during recent years has no more than kept pace with the broadening markets for pulp and paper. Continuation of this expansion in demand is indicated particularly in the utilization of kraft and paperboard for shipping containers, and in the use of higher grade sulphite pulp for the manufacture of rayon, cellophane, plastics and other synthetic products.

It is in this field of synthetic products that the greatest potential outlet for wood pulp exists. With about 95% of world pulp production still being consumed in the manufacture of paper, the surface has hardly been scratched in the synthetic market. Those companies engaged in supplying this type of pulp are most likely to maintain operations at high levels in the period ahead.

Further advances were made in 1937 in the utilization of hardwood for manufacture of high grade sulphite pulp. The nature of such woods as maple, birch, and beech has made it difficult to treat them with ordinary chemicals. New chemical formulae have now solved the problem and numerous areas in the United States, denuded of all but hardwood tress, may now be a source of profit to woodland owners.

*Vice President and Director of Brown Company. Abstracted from Pulp and Paper Industry discussion by Mr. Brown.

Dependability

Because all makes of Newspaper Presses are in service producing many publications, some purchasers of Newspaper Presses are under the impression that all are equally dependable.

Such, however, is not the fact. Dependability results only from the use of the most suitable materials of adequate size, correctly machined and securely mounted, and, most of all, from a perfection of many details that only long-continued experience with constant redesign and improvement can bring about.

For example, the ink distribution drive consumes (according to an analysis by the General Electric Co.) 58% of the total power required by the press, yet in most presses the ink motion drive is relatively small and—again relatively speaking—lightly supported; also while main and printing cylinder driving gears may be of steel, ink driving gears are often of iron or its alloys.

The Scott Ink Distribution Drive, through the longest experience in Unit Presses coupled with the fastest continuous operating speeds, has been developed to insure the utmost reliability. The gears are the full inking cylinder diameters, not reduced, thus obtaining the maximum leverage and the lowest tooth pressure. All inking drive gears are of carbon and alloy steel. All sliding of the gear teeth (for oscillation of ink cylinders) has been eliminated allowing full width teeth constantly in mesh, and every ink motion gear has rigid supports on both sides. Then, too, the entire ink drives run in a constant bath of oil within oil-tight housings, keeping out all paper dust, ink, dirt and grit.

When you buy a newspaper press insist upon detailed specifications of ink motion drives: Gear diameters, width of constant tooth mesh, materials, supports and housing. They represent the "heart" of the ink motion drive.

WALTER SCOTT & Co.

New York
230 West 41st Street

Plainfield, New Jersey, U. S. A.

Chicago
1330 Monadnock Bldg.

Success thru Service—*In 1900 the Monotype entered a field already occupied by several thousand other machines which were functioning, either as single-type assembling machines or slug-line machines, to produce composition for printers and publishers. Its success in originally securing trial and recognition, and continued, constantly growing use over a period of thirty-eight years, is factual demonstration of its ability to meet the typesetting needs of a substantial number of plants of various kinds which, for a variety of reasons, prefer the single-type composition produced on Monotypes to the product of other typesetting machines.*

Monotype users tell

OF THEIR SATISFACTION WITH SINGLE KEYBOARD AND CASTER EQUIPMENT

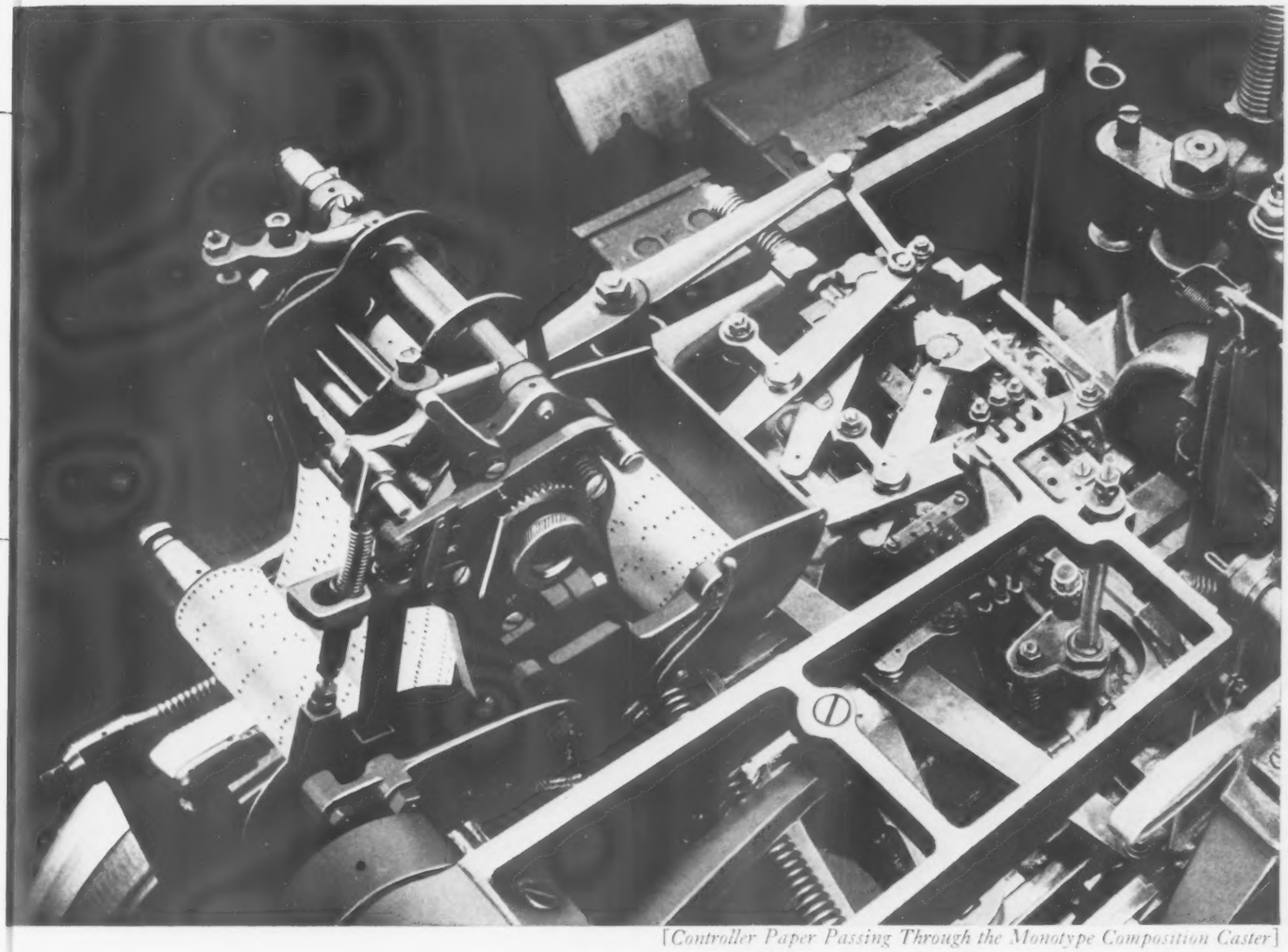
Full information concerning all Monotype Equipments is available upon request.

DAYTON, Ohio—
Our single Monotype Keyboard and Composition Casting Machine Operator produces most of our typesetting and when not busy on live copy he utilizes our Casting Equipment to produce type, spacing materials, leads, rule and slugs for use by our compositors. Sufficient composing room materials yield dividends. One of the most important advantages of the Monotype System to the job and commercial printing plant owner is that it gives him an opportunity to decide whether jobs can best be produced entirely by machine, by a combination of machine typesetting and hand work, or entirely by hand with type and materials made on the Monotype. Our investment in Monotype equipment has yielded us returns in a measure that permits us to record our satisfaction with our combination equipment operated by single combination man.—*L. C. Giele*, Giele & Pflaum Co.

SEATTLE, Wash.—
We wish to thank you for the prompt and splendid cooperation on the new Caster unit we have just installed to replace our old Caster which gave us over twenty-five years of wonderful service. It was hard to let "old Faithful" go. We take pleasure in recommending the Monotype to anyone who might be interested in typesetting machines.—*Herman H. Emme*, Pacific Label & Carton Co.

SIDNEY, Ohio—
We have been a Monotype user for twenty years and are as enthusiastic over this equipment today as when installed. We should be qualified therefore to state the Monotype is profitable in a small shop as well as the larger ones. We could not keep house without it.—*C. L. Werst*, The C. L. Werst Publishing Co.

This advertisement composed in Monotype Caslon and Italic with 20th Century Family.



[*Controller Paper Passing Through the Monotype Composition Caster*]

BALTIMORE, Md.—
It is nearly fifteen years since I gave you our order for our Monotype Typesetting Machine. I cannot think of any equipment investment we have made that was more profitable or a greater help to us in developing our business than our Monotype. When I placed our order I did so with some doubt as to how practical it would be to operate the equipment with a single operator. Subsequent experience has proven that our fears in this respect were unfounded as we have operated with only a "combination" man and have had no difficulty getting capable combination operators who were able to get results for us.—*E. Jeter Bray*, The French-Bray Printing Co.

TORONTO, Ont.—
One of its great features is its marvellous range of products, absolutely accurate. It enables us to make our own type up to 36 point in entire series. We compose the matter for booklets, etc., in any of the faces desired. We make our own rules, leads, slugs and spacing. This, any time, day or night, if required, is a great advantage. Besides being an indispensable machine to a complete composition room, it helps preserve the artistic taste of our compositors. You have kept up to the minute in improvements on the machine and in the variety of type faces you have produced. I find it not only indispensable but a business getter.—*A. Macoomb*, The Macoomb Press.

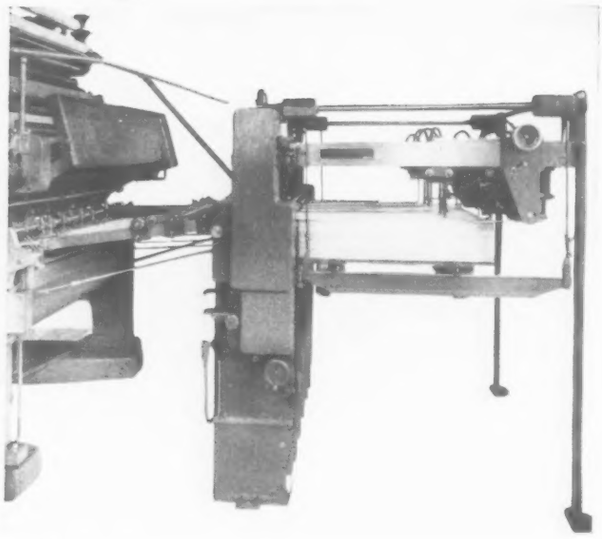
PULASKI, Va.—
Our first experience with your Monotype Keyboard and Caster began in 1913, and we have been a constant user ever since. Our work, for a smaller shop, is quite varied, but is principally made up of commercial jobs and pamphlets. We have a reputation of being among the most accurate printers in Virginia, and we feel that a good part of the credit for this belongs to the Monotype. In the hands of a competent operator the Monotype is capable of wonderful results.—*Lewis Smith*, B. D. Smith & Bros.

BOSTON, Mass.—
We feel that the Monotype equipment is a very vital part of our plant. It has enabled us to give service and quality which count for so much in our work and we believe that our success is in no small part due to the Monotype. With pleasure we mention your fair treatment, prompt and courteous service and we thank you.—*E. S. Everett*, The Everett Print.

ALTOONA, Penna.—
After eight years' experience with your Company, we feel very kindly toward our Monotype Keyboard and Caster. We specialize in handling the most complicated of form work, and all orders are printed in combination direct from the type as cast by your machine. We know of no other equipment that would permit us to handle this complicated work in this manner and keep our long list of satisfied customers.—*A. B. Crane*, Times-Tribune Co.

Lanston Monotype Machine Co.

MONOTYPE BUILDING, TWENTY-FOURTH AND LOCUST STREETS, PHILADELPHIA, PA.



YOU *can get* close register at high speeds—*and reduce your costs* — with the Christensen

Stream Feeder

Others are doing it

35 Installations in the Past Few Months, on:

- Chambers and Hollingsworth Varnishers
- Claybourn 2-color and 5-color Rotaries
- Cottrell 4-color Rotaries
- Hoe Offset Presses
- Miehle Single-and 2-color Presses
- Sterling 3-color Rotaries

The Christensen Stream Feeder swings into 1938 with a remarkable record of experience on actual installations—meeting all kinds of feeding conditions on many modern, high-speed, sheet-fed machines—handling stock from the lightest to heavy cardboard . . . You can rely on the proved, simple Christensen Stream Feeder to keep pace with YOUR highest speed presses, to improve register, to reduce "down time"—on your present equipment. Write today for complete facts, giving name, model, size, etc.

The Christensen Machine Co.

100 FOURTH STREET - - RACINE, WISCONSIN

Branch Offices: CHICAGO, 608 S. Dearborn Street; NEW YORK: 461 Eighth Avenue; LOS ANGELES, Printers Supply Corp.; SAN FRANCISCO, Norman F. Hall Company.
In Canada: Sears Limited, Toronto, Montreal, Winnipeg and Vancouver.

Ask yourself? these questions

1. Do your feeders limit the speed at which your presses run?
2. Are you interested in improved register?
3. Can you appreciate the fact that a feeder presenting sheets to the front guides of the press at a sheet speed of but 8 to 13 inches per cycle would improve register?
4. Would a feeder conveyor that eliminates slowdowns, and other sheet-controlling devices, reduce "down time" on your press-and-feeder unit?

Equipment Sales

Intertype Sales

Intertypes have recently been ordered by the Appeal Printing Co., Inc., New York City; Sacramento Composition Co., Sacramento, Calif.; American Menu Printing Co., Chicago, Ill.; *Post-Register*, Idaho Falls, Idaho; *Herald & News-Tribune*, Duluth, Minn.; *Argus*, Minneapolis, Minn.; *Spokesman-Review*, Spokane, Wash.; Vallejo *Evening News*, Vallejo, Calif.; City Job Print, Belfast, Maine, Essanel Press, Inc., Milwaukee, Wis.; Alvin Settle, Lisbon Falls, Maine; George F. Gaughan, Waterbury, Conn.; Rand Typesetting Service, Belmont, Mass.; *Potters Herald*, East Liverpool, Ohio; *Tribune*, South Bend, Ind.; *Gazette*, Cedar Rapids, Iowa; *Gazette*, Galax, Va.; *Hershey Times*, North Platte, Nebraska; *Constitution*, Lawton, Okla.; *Monitor*, Denver, Col.; *Amerika-Echo*, Toledo, Ohio; Kline Linotyping Co., Inc., New York City; Highland Parker Printers, Inc., Detroit, Mich.; Kellaway-Ide Company, Los Angeles, Calif.; Rytex Company, Indianapolis, Ind.; Menu Printing Co., San Francisco, Calif.; *Courier*, Waterloo, Iowa; *Journal-Transcript*, Peoria, Ill.; Economy Advertising Co., Iowa City, Iowa; Clint H. Denman, Sikeston, Mo.; Fresno *Bee*, Fresno, Calif.; Schmid's Printery, Staunton, Va.; *Tribune & Democrat*, Johnstown, Pa.

Newspapers Install Ludlow Equipment

Ludlows have been installed recently by the *Christian Science Monitor;* Lincoln (Neb.) *Star;* Philadelphia (Pa.) *Inquirer;* Santa Fe (N. M.) *New Mexican;* Paris (Tenn.) *Post-Intelligencer; The Voice* (Spanish) New York City; Zanesville (Ohio) *Times-Recorder* and *Signal;* Ilion (N. Y.) *Sentinel*, and the Goldsboro (N. C.) *News-Argus.*

Newspapers Install Elrod Equipment

Elrod lead, slug, rule and base casters have been installed recently by the Toledo (Ohio) *Blade;* Davenport (Iowa) *Democrat;* Fall River (Mass.) *Herald-News;* Lockport (N. Y.) *Union-Sun* and *Journal;* Monterey (Calif.) *Peninsula-Herald*, and the Goldsboro (N. C.) *News-Argus.*

Recent Linotype Installations

Linotypes recently have been installed by the *Daily News* and the *Evening News*, Los Angeles; Detroit Greek *Tribune;* Shelby Salesbook Co., Shelby, Ohio; Delta *Star*, Greenville, Miss.; Brattleboro (Vt.) *Reformer & Phoenix;* Vermont Printing Company, Brattleboro, Vt.; Appleton (Wis.) *Post Crescent;* Coffeyville (Kan.) *Journal;* Hibbing (Minn.) *Daily Tribune;* Jacksonville (Ala.) *News;* Daily *Bulletin* and *Herald Democrat*, Trenton, Tenn.; Bergen *Evening Record*, Hackensack, N. J.; *Standard-Freeholder*, Cornwall, Ontario; Muncie (Ind.) *Star;* Choctaw *Advocate*, Butler, Ala.; Pell City (Ala.) *News;* Paterson (N. J.) *Evening News;* Golden Gate *Press*, Oakland, Calif.; Honolulu (Hawaii) *Star Bulletin;* Beatrice (Neb.) *News* and *Legal Record;* Daily *Republican*, Phoenixville, Pa.; John C. Gering, Freeman, S. D.; *State Register* and the *Guthrie News*, Guthrie, Okla.; *Daily Reporter*, Lincoln, Neb.; Red Bank (N. J.) *Standard;* Binghamton (N. Y.) *Press;* Allen Printing Company, Gainesville, Fla.; *Daily Globe*, Shelby, Ohio; Egan Printing Company, Dallas; *News-Standard*, Uniontown, Pa.; *Durant Daily Democrat* and the *Bryan County Democrat*, Durant, Okla.; Galveston (Texas) *Tribune* and *News;* Shoppers Guide, Fremont, Neb.; The Baker Company, Lubbock, Texas; Amarillo (Texas) *Weekly;* Binghamton (N. Y.) *Press;* Knoxville (Tenn.) *Journal; The Reveille* of Louisiana State University, Baton Rouge, La.; Ottawa (Ontario) *Journal;* Randolph *Tribune*, Asheboro, N. C.; *Coquille Valley Sentinel*, Coquille, Ore.; Pakwana (S. D.) *Press Reporter;* Morton Printing Company, Inc., Pontiac, Ill.; *Evangelical Press*, Harrisburg, Pa.; Lock Haven (Pa.) *Express;* Green Bay (Wis.) *Press Gazette;* Arrow Match Company, Inc., Chicago, Samuel Luckman, New York City.

MATRIX INFORMATION

The Mergenthaler Linotype Company has distributed to the trade a new edition of its book entitled "Useful Matrix Information." Among the new features in this 120-page volume are sections on "How to Order Matrices," "Key to Matrix Terms," "Matrix Bridge and Notch Information," "Keyboard Diagrams," and "All-Purpose Linotype Information."

DAYLIGHT ALL NIGHT ...*is News!*

Here, in a large Southern newspaper, a great deal of night operation is necessary. With Cooper Hewitt "skylights" over the composing tables operators enjoy a light more detail-revealing and more uniform than daylight itself. Eye fatigue is virtually banished. Work is speeded and errors are fewer.

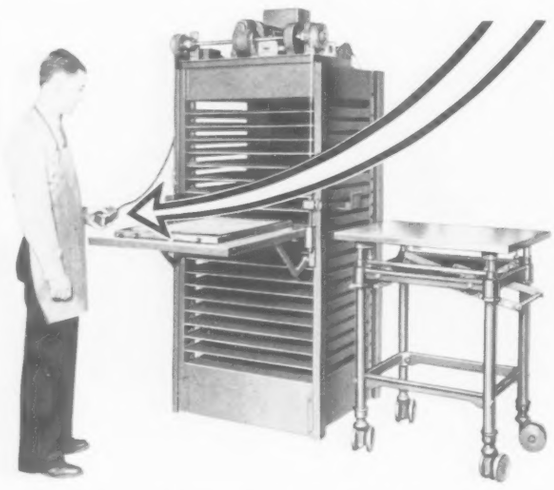
Newspapers and jobbing shops alike are finding Cooper Hewitt light a profit-producing investment when engineered to their particular needs. For complete information write to the General Electric Vapor Lamp Company, 899 Adams Street, Hoboken, New Jersey.

GENERAL ELECTRIC VAPOR LAMP COMPANY

860C

It Is Easy to Handle Heavy Forms By Electricity . . . .

Just Press the Button!



No. 15221 ELECTRIC PAGE-STORAGE CABINET

Now you can handle heavy page forms by electricity . . . with the Hamilton No. 15221 Electric Page-Storage Cabinet. After the form is molded, just truck it to the electric cabinet, slide it on the elevating shelf, press the button and the shelf and form are electrically raised or lowered to proper position for filing. This swift and easy method of filing helps you to clear your make-up surfaces for other pages.

The No. 15221 Electric Page-Storage Cabinet needs no special high power line. It comes complete with a 110 volt, 60 cycle, single phase, ¼ horse power motor; ready to plug in on any 110 volt A.C. lighting circuit.

One man can handle forms with this new device. It keeps make-up surfaces clear, requires fewer trucks, and economizes on floor space. It has 20 shelves, each 29" wide, 29" deep, with 2 3/8" of space between. The height to the top shelf is only 61 ¼".

Complete data on the new, improved Electric Page-Storage Cabinet is now ready. Send in the coupon for full information.

HAMILTON MFG. CO.
Two Rivers **Wisconsin**

Hamilton Mfg. Co., **PE-1-38**
Two Rivers, Wis.
Send me full information on the No. 15221 Electric Page-Storage Cabinet.

Signed .....
Firm .....
Address .....
City and State.....

New Literature

Gratis for the Asking

Flex

Folder printed in the Netherlands gives showings of various sizes of Flex foundry type face and by means of settings shows how face should be used. *P-Double-E File No. 1EE.*

Eureks Square Stop Control

This new control is attached to front end of photoengraver's camera lens barrel and is synchronized with the Douthitt System already on the camera. Produces round instead of usual square halftone dot in the negative. *P-Double-E File No. 2E3.*

Plant Cleanliness

Folder shows by means of halftones different models of portable Ideal compressed air cleaners for cleaning machinery in the printing plant. *P-Double-E File No. 1D.*

9-in. Workshop Precision Lathes

Catalog describes and illustrates new model South Bend Lathe. *P-Double-E File No. 1CC.*

Industrial Trucks

Catalog illustrates and describes Elwell-Parker electric power lift and transporting trucks for paper stock of all kinds in the printing plant, both newspaper and commercial. *P-Double-E File No. 4D.*

Numbering For Profit

Booklet has just been produced by the Wetter Numbering Machine Co. A section of the book shows eighty-five different kinds of jobs on which numbering is required. It is a good check list for any printer to keep handy. Subsequent pages of the book show various sizes and types of numbering machines, facsimile impressions of each type and size, directions for the cleaning, lubrication and care of numbering machines and trouble-shooting hints. Aside from the useful information in this booklet, it is interesting because of its physical form, being made self-indexing throughout its 48 pages by progressively shortening the pages from pages 4 to 28, and lengthening them from 29 to 45, aligning all at the bottom. The use of aluminum and black ink enhances the ease of reference. *P-Double-E File No. 1H.*

Any of these new pieces of literature will be furnished upon request to *Printing* EQUIPMENT *Engineer*, 1276 W. Third St., Cleveland, Ohio.

CHANGES CORPORATE TITLE

As of January 1, the corporate title of Koss, Morgan & Brookes, Inc., has been changed to Brookes & Sons Co. Predecessors of the company, the C. H. Morgan Co., founded in 1881, and O. A. Koss & Co., founded in 1907, were merged in 1922 under the name of Koss, Morgan & Brookes, Inc. Morton S. Brookes was treasurer of O. A. Koss & Company. The principals had always been active in printers' organization work.

Mr. Koss retired in 1929 and C. H. Morgan died in 1931. Their interests were purchased by Morton S. Brookes and his two sons, John S. and Morton S. jr.

The company's business is along advertising lines. A service and art department is maintained for development of advertising pieces of all kinds, including die-cut displays, window signs and other Point-of-Purchase pieces.

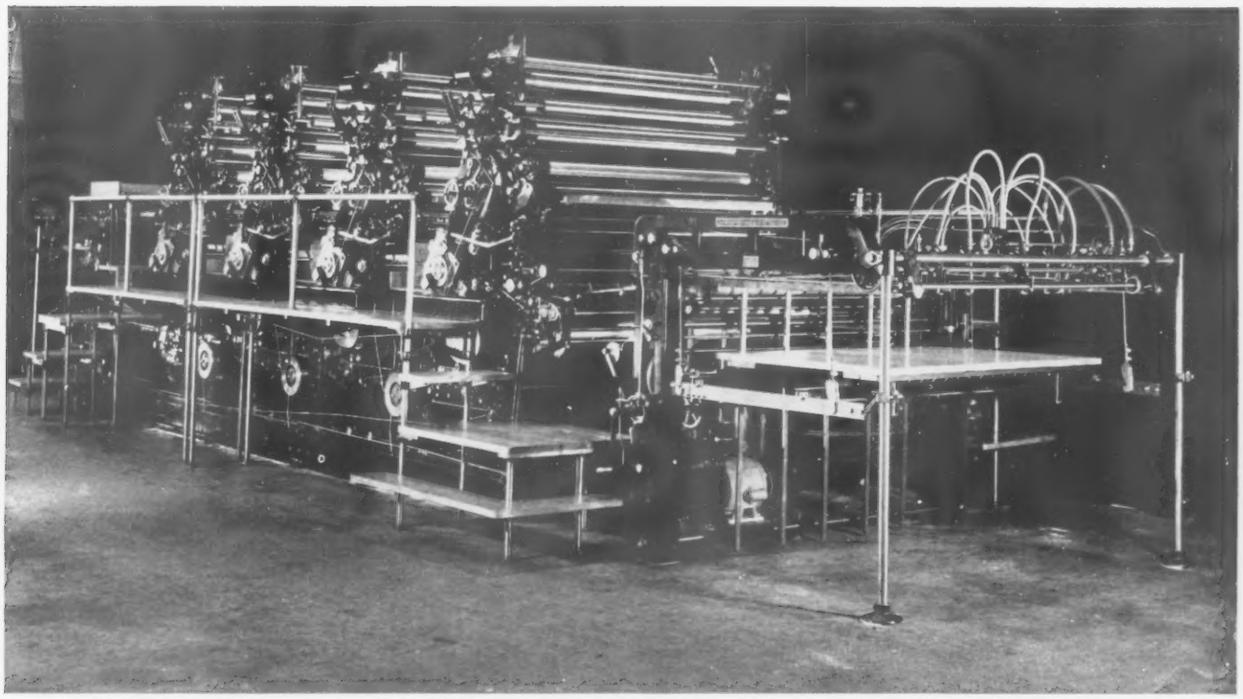
TWENTY-FIFTH ANNIVERSARY

The twenty-fifth anniversary of the establishment of the Department of Printing at Carnegie Institute of Technology, Pittsburgh, Pa., will be celebrated February 11 and 12. In addition to class reunion feature, discussions on present-day printing problems will take place. Harry L. Gage, Frederic W. Goudy, Fred J. Hartman, John Martin and other men prominent in the printing field, will be honored guests of the occasion. Glen U. Cleeton is Head of the Department of Printing.

P-Double-E Index

File technical literature according to the symbols in the P-Double-E Filing System. Then when you want to locate it for specific information it will be easy to find. The system for one or more departments is easily set up.

CHECK THESE 3 POINTS IN PRINTING PRESS BEARINGS



Harris "LSH" 4 color offset press—manufactured by Harris-Seybold Potter Company, Cleveland, Ohio. Press is equipped with 36 TIMKEN Bearings; plate cylinders 8 bearings, blanket cylinders 8, impression cylinders 8, transfer cylinders 6, delivery cylinders 2, drive shafts 4.

Tapered Roller
TIMKEN BEARING
EQUIPPED

A symbol of quality for any piece of equipment with which it is associated

The Rock Island "Rockets" Roll On TIMKEN Bearings

GLIDE—as you ride a Timken-equipped train

It is one thing to reduce friction in printing press operation. It's another to assure consistent operating precision. But the toughest of all bearing jobs is the maintenance of high printing quality at higher and higher speeds—and to do it at consistently low cost for operation and upkeep.

TIMKEN Bearings have demonstrated their ability to match all of these requirements. You, like all printers, want high speed —high quality—low cost production. Assure yourself of it—specify TIMKEN Bearings in all kinds of printing equipment.

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

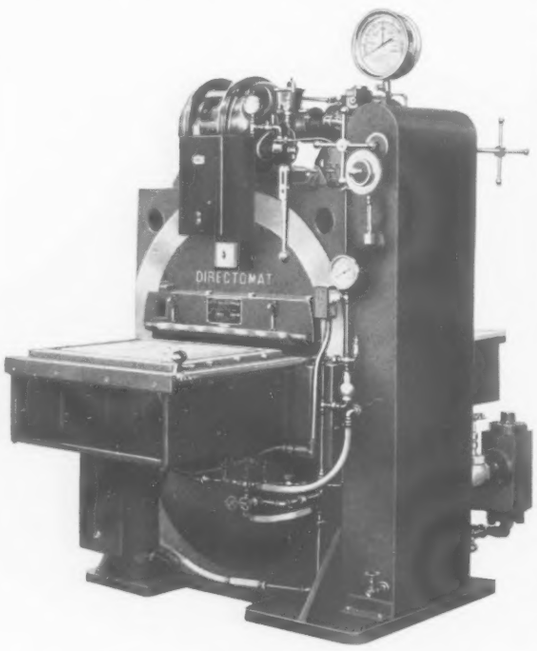
Manufacturers of Timken Tapered Roller Bearings for automobiles, motor trucks, railroad cars and locomotives and all kinds of industrial machinery; Timken Alloy Steels and Carbon and Alloy Seamless Tubing; Timken Rock Bits; and Timken Fuel Injection Equipment.

TIMKEN
TAPERED ROLLER BEARINGS

Eliminate Stretch of the Mat

by means of the

DIRECTOMAT MATRIX PRESS



One of the most vital steps in producing a better printing plate is a mat faithfully reproducing all the details in the form. All alert mechanical men know it.

THEY KNOW that most matrix rollers actually stretch the mat about 1/16″ wider than the type form.

THEY KNOW that this stretch not only distorts the face of the type and the dot in the screen, but also limits the depth that can be moulded without breaking or cutting the mat.

THEY KNOW that mats moulded on the DIRECTOMAT are exactly the same size as the form, completely eliminating all stretch, distortion and buckles, and allowing a full depth impression without fracturing or cutting through.

These are among the many reasons why the DIRECTOMAT is growing in popularity year after year. To buy the best is to practice real economy. Over fifty installations in all parts of the country bear out our claims.

Mail coupon for complete information.

Lake Erie Stereotype Equipment Corp.
Buffalo, N. Y.

Please mail complete information on DIRECTOMAT performance and economies to my personal attention.

NAME..... TITLE.....

CONCERN .....

STREET .....

CITY .....

68 OPERATIONS IN 17 MIN.

This miniature illustration was made direct from an $8\frac{1}{2}$ in. by 11 in. sheet, in one lift of paper. On the sheet are 54 holes, 2 thumb indexes, 12 different types of slitting and slotting, making a total of 68 operations all done on a Challenge Paper Drilling Machine. Company states total elapsed time (as clocked from start to finish) of all machine changes and operations was 17 min. This includes set-up time.

COLOR CALENDAR

A new Color Calendar featuring appropriate color combinations for each month in the year with suggestions on how to use them effectively is being distributed by the International Printing Ink Corporation, New York City. Combining the general utility of a calendar with the functions of a guide to color harmonies, the IPI Color Calendar was designed for printers, lithographers, advertisers, packagers, artists, and others who use color frequently.

The Calendar carries different color steppings to make 2500 two-color combinations or 60,000 three-color selections. Two gray masques are included with the Calendar to simplify color matching and color selection. The Calendar tells how to choose colors according to the

complementary, neighboring, and tried principles and how to get the greatest number of color schemes. Many effective combinations may be obtained not by following any definite rules or specifications but through pure experimentation.

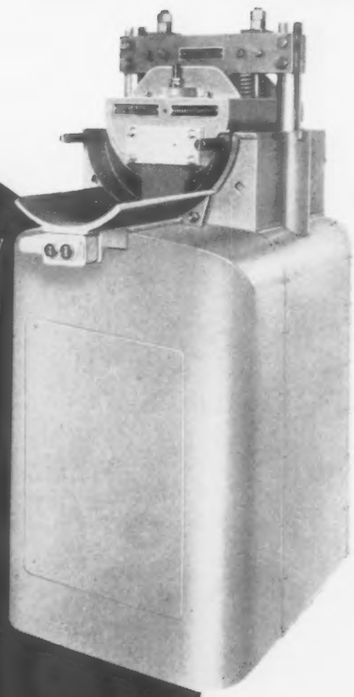
The original plates from which the Calendar sheets were printed were designed by Robert Leonard and used throughout 1937 in IPI's monthly insert advertising. The Calendar contains examples of many types of letterpress and offset printing, including work done with gold and silver metallic inks, process printing, Ben Day, and overprint varnish. An explanation after each color sheet tells how it was printed and indicates how special effects were produced.

A HIGHER LEVEL OF CURVED-PLATE ACCURACY

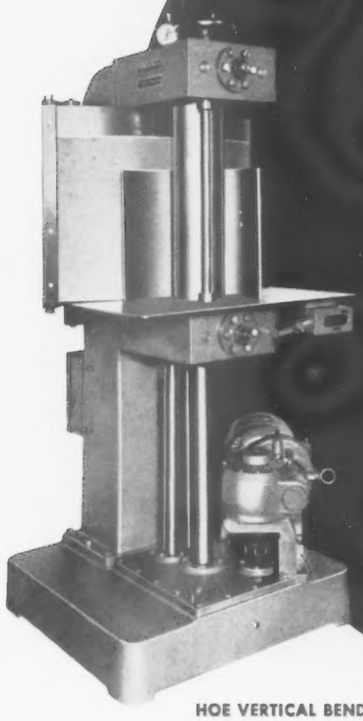
..with the New and Improved

HOE

BENDER and FORMER



HOE POWER-OPERATED FORMER



HOE VERTICAL BENDER

With new and improved principles of design the Hoe Bender and Former produce Electrotype plates of more accurate curvature, plates free from flats, plates that reduce make-ready as well as produce quality printing

On the Bender, the vertical principle of design permits feeding in the plates on end and simplifies the squaring operation. Plates may be beveled on the ends before bending with the assurance that the curved ends will be perfectly parallel.

The adjustable roller assures accuracy and uniformity of plates heretofore unattainable. The curvature may be varied to meet conditions and the same Bender used for various diameters from 9″diameter to approximately 20″

The flexible steel bending plate moves through an arc with the plates, and is returned automatically to its original position after the plate is curved.

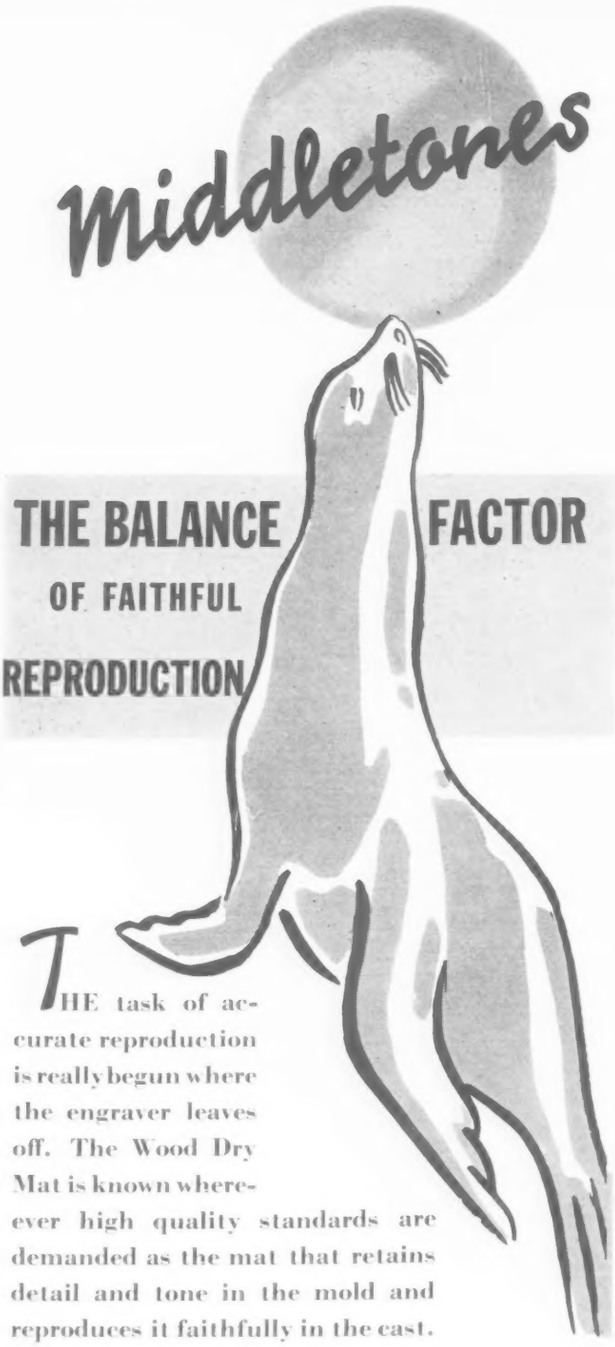
The Power-Operated Hoe Former completes the final bending operation. It operates on an entirely new principle and is a great improvement over previous types of hot and cold screw Benders.

If producing accurate curved electrotype plates is one of your problems, write for additional information.

R. HOE & CO., Inc.

General Offices: **910 East 138th Street (at East River) NEW YORK CITY**

BOSTON SAN FRANCISCO CHICAGO BIRMINGHAM LONDON



THE task of accurate reproduction is really begun where the engraver leaves off. The Wood Dry Mat is known wherever high quality standards are demanded as the mat that retains detail and tone in the mold and reproduces it faithfully in the cast.

Boost the quality of your halftones with Wood Dry Mats.

WOOD DRY MATS

Always Uniform

WOOD FLONG CORP.

HOOSICK FALLS, NEW YORK

Master Craftsmen make them for Master Craftsmen

Data

Of general interest respecting number of newspapers in Ayer directory.

A DECREASE of 221 in the number of newspapers published in the United States in 1937 compared with the preceding year is reported by the 1938 edition of N. W. Ayer & Son's Directory of Newspapers and Periodicals. The directory lists 2084 daily English language newspapers, a decrease of 23 under the year before; 10,629 weeklies, a decrease of 176; and 359 semi-weeklies, a decrease of 18. On the other hand there were 15 more daily papers with Sunday editions, an increase of eleven in the number of foreign-language daily papers, and three more tri-weekly papers.

For the first time the annual classifies daily papers according to the morning and evening fields and shows that of those published in the United States, 1605 are evening papers, 454 morning, and 25 all-day.

The editors estimate the aggregate net paid circulation of the dailies in the United States at 41,400,000, of which 25,800,000 represents evening papers and 15,600,000 morning papers. Estimated Sunday paper circulation is 31,000,000.

While the number of newspapers decreased, continuing a tendency that has been evidenced for several years, there was an increase of 91 in the number of periodicals published in the United States. There were 128 monthly periodicals listed for the first time, but this increase was partially off-set by decreases in other classifications.

All told, the directory lists 20,683 publications in the United States, Canada, Newfoundland, Bermuda and the West Indies.

In addition to listing publications and information concerning them, the directory includes a map and description of each state and a summary of its geography, population, agriculture, forests, manufactures, minerals, etc., showing changes revealed in the most recent census. There is also a brief summary of information about each county, city and town listed.

NEW TECHNICAL DIRECTOR

The Executive Council of the International Photo-Engravers' Union has instituted a Technical Research and Service Department to be conducted under the supervision of J. S. Mertle whose office and laboratory will be at 901 Hermosa Ave., Cincinnati, Ohio. The services of Mr. Mertle will be available to employers as well as members of the International Photo-Engravers' Union. Functions of the new department will include personal inspection of established plants when necessary. All inquiries of a technical nature will be answered by the new technical director.

IPI ESSAY CONTEST JURY AND COMMITTEE

Members of the Jury and of the Executive Committee for the IPI Essay Contest on Color have been announced by Fred J. Hartman, chairman of the Committee and educational director for the National Graphic Arts Education Guild. The Guild is cooperating with IPI in sponsoring this project.

Local winners in the Essay Contest, which is open to high school students of printing, have been chosen at each of the 280 schools entered in the competition. They will receive Franklin Medallion awards during Printing Education Week, January 16-22.

A Jury headed by Harry L. Gage, vice-president of the Mergenthaler Linotype Co., Inc., is selecting the national winners from the best papers sent in from each school. Nearly 6000 individual entries were submitted. Students wrote on some phase of the subject, "The Future of Color in Printing."

Serving with Mr. Gage on the Jury are: Dr. M. F. Agha, art director, The Conde Nast Publications, Inc.; Arthur S. Allen, color engineer; Louis Flader, commissioner, American Photo-Engravers Association;

Again in 1937

Morrill led the world with the greatest tonnage of ink sold by any manufacturer. Deal with the leader and get the quality, economy and trouble-free performance that only the leader can give you!

For SHARP, CLEAR PRINTING . . . CLEAN VIVID HALFTONES . . . STRONG AND SMOOTH COVERAGE OF LARGE TYPE AND SOLIDS . . . TEXT THAT SPARKLES ON THE PAGE— Use

IN contributing to the typographical excellence which brought the 1937 Ayer Award to the Los Angeles Times—and to thousands of other Morrill-printed newspapers the finest of printing quality . . . the Geo. H. Morrill Company is deeply grateful for another record-breaking year in the world-wide use of Morrill Inks.

MORRILL INKS

Standard of the Newspaper World

GEO. H. MORRILL CO.

Division GENERAL PRINTING INK CORPORATION

100 SIXTH AVENUE • NEW YORK, N. Y.

BRANCHES • Boston • New York • Philadelphia • Detroit • Chicago • St. Louis
Minneapolis • Fort Worth • Los Angeles • San Francisco • Seattle

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● BURGESS CHROME MATS hold their depth of mould on stock shelves regardless of weather.

A LABORATORY PRODUCT

Presses Only Print What You Give Them

A printing press can only print what is on the stereotype plate. No matter how carefully that plate is cast it can only reproduce what a stereotype mat moulds into it. With its smooth, non-porous face and fine-grained, interior toughness the Burgess Chrome Mat captures fine halftone areas . . . and reproduces them practically perfect on the printing plates. That is why Burgess Chrome Mats, since their sensational introduction, have led the entire field in popularity and results.

BURGESS CELLULOSE COMPANY - Freeport, Illinois

A314

Pacific Coast Representative, RALPH LEBER, 426 Polson Bldg., Seattle, Washington

CHROME MATS

Made in U. S. A.

FAMOUS BAD GUESSES

● The man who guesses about the condition of his type metal is also skating on thin ice and the result can be equally disastrous. In either case it is better to be sure . . . and safe . . . by not taking chances. Guessing about type metal is expensive, wastes time and causes endless trouble. It may be the cause of a job being refused, and even cause the loss of a customer. Imperialized plants do not guess, for *Imperial takes the guess out of type metal.* These plants do their metal-correcting systematically and economically. They add Imperial Plus Metal pound for pound of dross skimmed off . . . no guessing.

This insures sharper, solid casts, lower casting temperatures, less dross and less fuel consumption. It eliminates costly recasts and production losses. To find out how to stop guessing about your type metal, get the details of the Imperial Plus Plan.

THE IMPERIAL TYPE METAL CO.
Philadelphia • New York • Los Angeles • Chicago

Imperial
TAKES THE GUESS OUT OF TYPE METAL

and Fred W. Hoch, chairman, Education Commission, International Association of Clubs of Printing House Craftsmen.

This year's Contest Committee, as announced by Mr. Hartman, includes: Bromwell Ault, president, The International Printing Ink Corporation; V. Winfield Challenger, director of printing, N. W. Ayer & Son, Inc.; John H. Chambers, director of Bureau of Education, International Typographical Union; Glen U. Cleeton, head of Department of Printing, Carnegie Institute of Technology.

Charles R. Conquergood, managing director, Canada Printing Ink Co., Limited; George H. Cornelius, president, United Typothetae of America; Thomas E. Dunwody, director, Technical Trade School; Dr. John Finley, editor, the New York *Times;* J. L. Frazier, editor, the *Inland Printer;* A. E. Giegengack, public printer, United States Government Printing Office; Frederic W. Goudy, art director, Lanston Monotype Machine Company; A. C. Hardy, professor of optics and photography, Massachusetts Institute of Technology.

William A. Kittredge, director of design, R. R. Donnelley & Sons Company; D. J. MacDonald, educational director, Lithographic Technical Foundation, Inc.; R. G. MacDonald, secretary, Technical Association of the Pulp and Paper Industry; John Clyde Oswald, The Gregg Publishing Company; Rudolph Ruzicka, artist, New York City; Laurance B. Siegfried, editor, the *American Printer;* H. E. Sterling, professor of advertising design, Carnegie Institute of Technology; Ernest F. Trotter, managing editor, *Printing.*

Newspaper Ink Color Selector

A newspaper color ink selector has been published by Howard Flint Ink Company. It is approx. $9\frac{3}{4}$ in. by $15\frac{1}{2}$ in. size and is plastic bound between stiff boards. By means of die-cut newsprint sheets the book is indexed by colors, each sheet bearing a particular color being identified with the name of the ink color and its number.

View of Color Selector for Newspaper Inks. This specimen book has just been published by Howard Flint Ink Company. Shown in the book are specimens of the A.N.P.A. newspaper standard color inks.

In the book are shown 12 reds, 12 blues, 6 greens, 3 purples, 1 magenta, 4 brown, 5 orange and 5 yellow inks, arranged progressively according to shade to facilitate color selection or identification.

Shown on a separate sheet are the three A.N.P.A. standard newsprint colors as adopted by the Mechanical Department of the American Newspaper Publishers' Association, the American Association of Advertising Agencies and the Association of National Advertisers.

Newspaper executives may obtain copies of the book by addressing Howard Flint Ink Company direct or in care of *Printing* Equipment *Engineer.*

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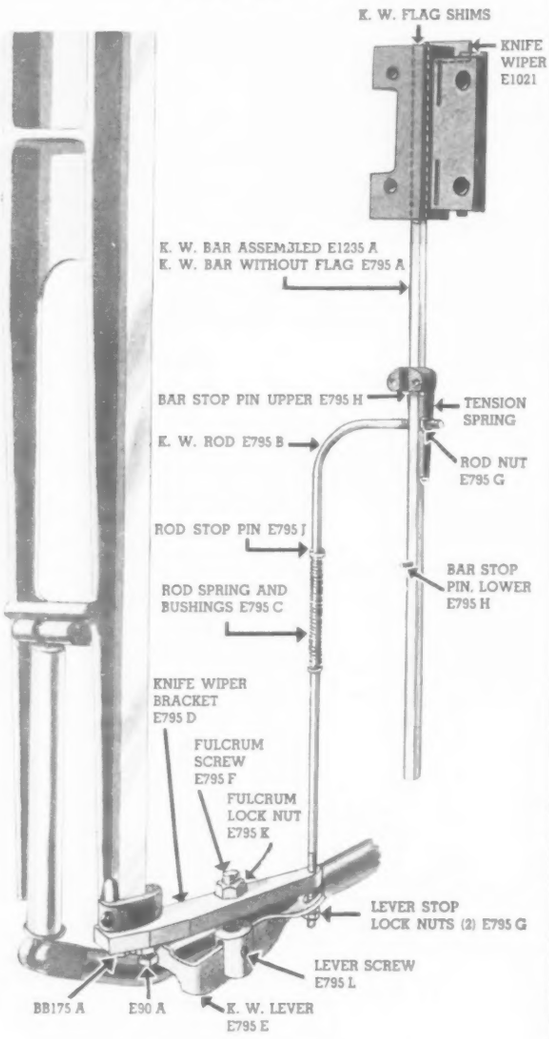
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Employers, production and mechanical executives may insert notices in this department.

Items for this department may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted," readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Any reasonable request from an employer or mechanical executive for the printing of a notice upon a subject other than the ones listed above will be granted.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing* EQUIPMENT *Engineer*, 1276 West Third St., Cleveland, O.

WANTED—SUCCESSFUL PRINTING PRESS SALESMAN—Old established manufacturer of printing presses and allied equipment is looking for a press salesman who has a record of accomplishment. The products are good, the territory is large and the company gives its men every support. The right man can make $300 per month, or more, depending upon ability and energy. If you are between 30 and 45 and looking for an opportunity in an organization which advances its men on merit, write in detail, giving experience, qualifications and past earnings. Enclose a recent snapshot of yourself. All applications will be considered in confidence. Box No. 37.

Silk Screen

(*Continued from Page 27*)

The silk must be stretched tight and is either tacked onto the frame or into the grooves if that type of frame is used.

MARKERS

The guides on the table top or base in silk screen work are called markers, and may consist of cardboard, wood or metal, firmly secured according to the weight of the sheets, material and number on the order.

THE SQUEEGEE

The squeegee corresponds to the brush of the painter and the printers' roller. The holder should be easy to handle but the rubber is more important. Some rubber is more resistant to oil and detergents than others. The best obtainable should be used. The rubber should have a square or flat edge, which should be kept sharp.

The rubber should be flexible, the edge square and the stroke of the squeegee firm in order to force the paint uniformly through the screen. Metal pins may be driven into the ends of the squeegee holder and these

MONOTYPE OPERATOR—Combination (Keyboard, Caster), also Giant and M.M. (Union) 19 years experience, reliable, capable; must be permanent. Reply Box 38.

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pins resting on other pins in the frame hold the squeegee while removing and inserting sheets, preventing it from sliding down over the screen.

A drying rack is an indispensable accessory and may be of lath-like form, using either strips of wood or steel wire on each slide, each tray or slide being pushed into a cabinet beneath which heat may be forced to hasten drying. One shop delivers the sheets into the tray from a traveling belt.

A flood-light box on the order of a print shop register table is useful for photographic screens. If the screen is made on the glass table with lights beneath it, a screen without holes can be made without tedious retouching, which otherwise might be necessary.

Special Paints are Used

Ordinary paint will not answer for the screen process which requires the best grade, very finely ground like the better printing inks and so made that they are easily

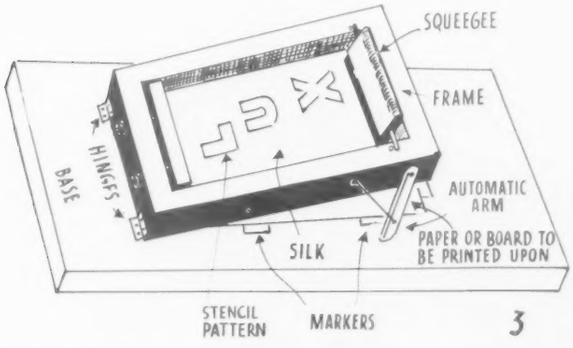

Fig. 3.—View of silk screen printing apparatus. The stencil pattern in this screen consists of the letters "LUX." The entire area of the screen within the frame has been opaqued to prevent the paint passing through the screen except in the design which is to be "printed" upon the cardboard, which in this case are the letters "LUX." The paper or board upon which the design is to be reproduced is placed under the frame against the markers (gauge pins) and the frame is let down upon it. A quantity of process color (special paint) of the chosen color is placed on the screen within the frame. The squeegee which consists of a block of wood in one edge of which is inserted a flexible rubber blade is then drawn from one end of the frame to the other. The action of drawing the flexible rubber blade across the screen pushes the paint through the interstices in the design on the screen and onto the cardboard. The frame is now raised, the freshly "printed" board is removed and another board is substituted. The operations described above are repeated until the run is completed. Special pins are inserted in each end of the squeegee as shown in this diagram to provide an even pressure of the squeegee blade upon the screen at all times. The average rate of production per hour with this type of frame is 300 copies per hour. Special attachments may be secured for platen printing presses and a special cylinder press may be secured, both of which have a much higher rate of production.

forced through the screen and also leave the screen clean. Some paints will clog the screen quickly and cause the painted sheet to stick to the screen when it is raised, causing a blur.

A paint in paste form of the same high quality as fine printing ink but with less body and tack works well with moderate pressure on the squeegee and is the only grade that should be used.

There is no all-purpose paint. Like printing ink, it must be suited to the surface on which it is applied. The special requirements may vary such as color, finish, drying, coverage, durability, fastness, permanence, etc. It is better to list the requirements when ordering the paint so that the manufacturer may supply the proper paint, thus saving loss of time and material in the shop.

(To Be Concluded Next Month)

Use It Sparingly!

● Follow these simple instructions when fastening cuts to bases with Booth's Zink Cut Cement: Use it sparingly—not because you want to save cement, but because in applying less you will obtain maximum adhesive properties of the cement.

Just apply a little dab in several places (depending on size) to the back of the cut, place the cut on its base and oscillate it while pressing firmly with the fingers. This will spread the cement and securely fasten the cut to its base. When applied in this manner the cement cannot ooze beyond the edge of the cut.

This method has been proved out by hundreds of users as evidenced by many repeat orders for the cement that holds all kinds of cuts to wood or metal base with the grip of a tiger's paw.

ZINK CUT CEMENT PRICES in the U. S. and Canada: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots. Stand - A - Lone Holders 2 for 25c, per dozen $1.00.

Booth's Green Rubber Rolls

provide dependable line casting machine keyboard operation. These rolls do not lose their resiliency for a long period of time. Working in conjunction with properly oiled keyboard cams, these rolls relieve the operator, the machinist, and the composing room superintendent of the many composition and mechanical worries caused by defective roller and keyboard cam action. To those who are not now using Booth's Green Rubber Keyboard Rolls, will you let us send you a trial pair at $1.30? Discounts in larger quantities.

E. A. BOOTH
RUBBER COMPANY
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"We Are Not Making So Much Dross"

EXPLAINED the stereo foreman when the business manager remarked that metal replacements were less frequent than they had been.

"Since we changed to Certifieds," he went on, "we don't have to throw first casts back into the pot. Less agitation, less dross, and slower loss of tin. So we don't need to tone up so often. Besides, we are getting quicker action in the rush hour."

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

CERTIFIED DRY MAT CORPORATION

9 Rockefeller Plaza, Dept. M.
New York, N. Y.

Certified DRY MATS

Fundamentals

(*Continued from Page 28*)

die quickly. Still other mats with facing materials varied greatly in shrinkage under changing weather conditions, which gave trouble in maintaining proper margins or color register. Today, however, dependable dry mats can be secured which permit adhering to the basic principles of good stereotyping practice as handed down to us. No longer is it necessary to burn up the metal to get plates without chills, blow holes and frosted faces.

Stereotypers have long known that it is best to cast plates at low temperatures, preferably a little below 600 deg. F. We all know that the cooler the metal the better will be the plates for clean, black printing of cuts and solids. Tin is what gives the metal most of its fluidity to reach into the depths of the halftone screens and bowls of small type. Tin also gives the plates that smooth, solid face which in turn permits good black printing. Thus it must be evident that a lack of sufficient tin in the metal body will rob the plates of the required face, solidity and strength to stand up under modern press speeds. Running the metal at temperatures way over 600 deg. F, day in and day out is what causes most of the loss of tin. Unbalanced metal forces the men to cast plates with dull faces which in turn again forces the pressmen to run too much ink to secure the required blacks, and we all know that this results in excessive offsetting, reprinting by nip rollers and the disgusting show-through which usually spoils some otherwise perfectly printed large halftone highlights, etc.

And while on this metal subject it may be well to mention that too many publishers permit their linecasting metal and often the flat casts to be run off by incompetent or careless fellows, who unthinking of the importance of this "boys' work," run the temperature excessively high and thus cause a daily waste of good metal and especially the tin. The results too often are porous and frosted slugs and cuts from which no stereotyper can secure good molding of mats and no pressman can expect to secure good black printing. My advice is to watch these seemingly small details—where the very foundation of good printing of your newspapers really begins.

Modern super-speed presses demand and should have sound plates without weakening blow holes and honeycombed portions if we are to have operation with speed, dependability and safety. Much of the weakness in plates can be overcome by casting, not only as stated by proper care of metal and casting at low temperatures, but by keeping the back of the casting box (the cradle of the hand box or the upright back of the Pony and the upright sliding back of the Autoplate) as cool as possible. I have seen stereotypers cast very solid plates with the back of the box almost as cool as ice, and their product had no signs of blow holes, honeycomb or pin holes in the black faces of type or cuts. Metal should also be stirred and well mixed before starting to make casts as an aid to good plate making. Of course, many of the metal furnaces are well equipped with power mixers for that purpose.

Another point the writer has discussed with heads of the stereotyping machinery manufacturers for years is that of cooling of the plates with relation to shaving them. To my mind, and that of many others, we have

been cooling and shaving our plates in a reverse manner from that which should be done. Many of us old timers can remember our earliest instruction when we were youngsters: "The last thing you do to a plate is *shave it*"—and we followed that advice or else we found ourselves looking for another job. If we are to give the pressmen a really true plate as to thickness and curve, then that wise advice seems still good to this date. It is my opinion, regardless of the brand of plate-making machinery used in any plant, that the plates should and must be *cast*, *trimmed*, *cooled* and *then shaved*. Some of the machines just recently manufactured now have a new method for *partly* cooling the plates while being trimmed and shaved. That is a step in the right direction to do that which our daddies and granddaddies knew long ago, but there is room for further improvement on these two important operations of plate-making. This problem belongs to the stereotyping machinery makers and should have their attention in fairness to the men who must use such machines to make good plates. In the meantime it would seem well to give careful and reasonable treatment to the metal we have for stereotyping, at least by not burning it up until some discerning metallurgist brings us something better.

Justification

(*Continued from Page 21*)

the vise closing lever rise together, raising the justification block on a horizontal plane. The force of the second justification stroke is exerted against the spaceband at the extreme left of the line first and then successively against the others. If the matrix line has been left fairly loose after first justification, the spacebands will be driven up a uniform distance at the end of the second justification stroke. In some instances, however, the length of the matrix line is so close to the measure being set that the line is practically justified after the first justification stroke. The force of the second justification stroke in these cases will be exerted against only one or two of the spacebands at the left of the line. It is important to note, however, that the position of the justification block during its second upward movement is always horizontal. The block does not begin to rise until the vise closing lever has raised the left-hand end of the block level with the right-hand end.

Quadding Machine Justification

The justification block on quadding machines rests normally in an inclined position, with its left-hand end higher than its right-hand end. This is accomplished by a slightly different arrangement of the vise justification mechanism. The vise justification bar brace, as usual, is pivoted at its lower end on the first justification rod collar. In the upper end of the brace, however, there is a pin which operates in a slotted cam attached to the justification bar. The lower end of the slot in the cam is enlarged so that the pin will remain in position until it is required to move to the other end of the slot.

When the justification lever rises for the first justification stroke, the pin in the brace remains in the lower end of the slot in the cam. The justification block rises, therefore, in an inclined position, with its left-hand end higher than its right-hand end. The spacebands assume this angle at the end of the stroke, those at the left of the line being driven up further than those at the right.

The reason for justifying the line in this manner on quadding machines is that the right-hand vise jaw

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GELASTIC ROLLERS
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Synthetic, soft, resilient, and uniform. Eliminate loss of press time for roller changes due to heat or cold. Particularly good for modern high-speed presses.

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Promote clean presswork and effect substantial reduction of makeready time. Oil-proof, flexible, durable.

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58th St. and First Ave., Brooklyn, N. Y.
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SALES REPRESENTATIVES IN PRINCIPAL CITIES

"FOR CRISP TYPE FACES, I USE G-E MELTING EQUIPMENT"

"And I find there's nothing like a crisp face to perk my printing up. The trend toward streamlined pages indicates that people want pages that are quickly and easily read. That makes proper melting of type metal all the more important. I want my pages to gain the maximum in attractiveness."

Electric heat is the best heat for melting type metal because it makes possible more exact regulation of temperature. Electric immersion heaters are placed directly in the metal to be melted, and distributed in such a way as to provide uniform heat throughout the bath. Temperature regulation is entirely automatic.

That's why nearly 200 newspapers* all over the country have turned to General Electric metal-melting equipment. This list of users includes the winners of the highest typographical awards.

Why not avail yourself of the advantages of electric heat for all your type-metal-melting needs? For further information call the nearest G-E sales office, or write General Electric, Dept. 6–201, Schenectady, N.Y.

*Send for list (GES-455).

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1. Higher-quality plates
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GENERAL ELECTRIC

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moves the line against the left-hand jaw after the line is delivered. The first elevator on a quadding machine places the line between the vise jaws in the same position as it does on a non-quadding machine. When the line is being delivered to the vise jaws, the right-hand end of the line is fairly close to the right-hand vise jaw. If the line is two ems shorter than the measure being set, there will be approximately two ems space between the left-hand vise jaw and the left-hand end of the line as the line is descending between the vise jaws. As

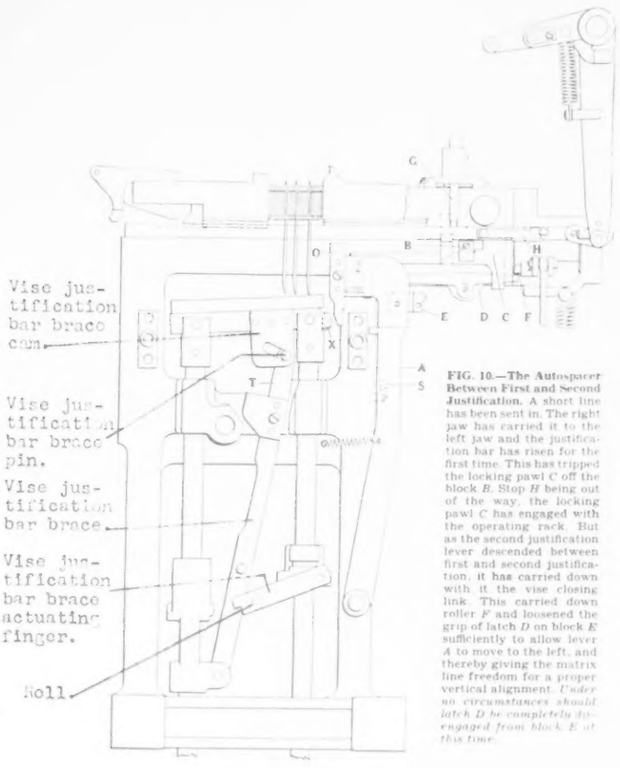

FIG. 10.—The Autospacer Between First and Second Justification. A short line has been sent in. The right jaw has carried it to the left jaw and the justification bar has risen for the first time. This has tripped the locking pawl *C* off the block *B*. Stop *H* being out of the way, the locking pawl *C* has engaged with the operating rack. But as the second justification lever descended between first and second justification, it has carried down with it the vise closing link. This carried down roller *F* and loosened the grip of latch *D* on block *E* sufficiently to allow lever *A* to move to the left, and thereby giving the matrix line freedom for a proper vertical alignment. *Under no circumstances should latch D be completely disengaged from block E at this time.*

soon as the first elevator is seated fully on the vise cap, however, the right-hand vise jaw, operated by the vise jaw mechanism, moves the matrix line to the left until it contacts the left-hand vise jaw. Consequently, the two ems slack in the line is transferred from the left-hand end of the line to the right-hand end by the movement of the right-hand vise jaw. *The direction of movement of the matrix line on a quadding machine during first justification is, therefore, opposite to that on a non-quadding machine—the line must be moved to the right instead of to the left.* The inclined position of the quadding justification block during first justification is designed to produce this movement. The spacebands are pushed up consecutively from the left to the right, thereby moving the matrix line in the required direction.

As in the case of non-quadding machines, the justification block on quadding machines is brought to a horizontal position by the vise closing lever. As the lever rises, the left-hand vise jaw is moved in slightly against the matrix line. The lever continues its upward movement and comes into contact with an actuating finger pivoted on the second justification rod collar. A roll on the actuating finger, working against the lower end of the vise justification bar brace, causes the upper end of the brace to move to the right. The pin in the upper end of the brace moves in the slotted cam, raising the right-hand end of the justification block until the block assumes a horizontal position. Then the justification lever and the vise closing lever rise together, raising

the justification block on a horizontal plane. The force of the second justification stroke is exerted against the spacebands at the extreme right of the line first and then successively against the others.

The basic operation of the vise justification mechanism undergoes little change because the main movements of the device are controlled by cam action. The slight amount of wear to which parts of the device may be subject over a period of years is not serious enough to affect the fundamental movements of the justification block. If the justification and vise closing springs are properly adjusted and if the various parts of the mechanism are cleaned and lubricated periodically, the device will operate satisfactorily in continuous use.

Standards

(Continued from Page 22)

"skylight" lighting, natural or artificial, is the low intrinsic brightness (or low intrinsic brightness per unit area) of the light source. A light source of large area in proportion to its output has several distinct advantages. Shadows are soft and diffused; both direct and reflected glare are reduced to a minimum. High illumination levels can be utilized to show up detail without giving a psychological reaction that the lights are "too bright" or "too hot."

In practice, several methods have been adopted to secure a large source area with artificial lighting. Totally indirect lighting is one solution, but it is seldom practical or efficient in the printing plant, as it calls for flat ceilings, kept immaculately white. This is particularly serious where a high light level is desired.

For work in composing rooms, or wherever bright type metal must be seen, definite advantages are secured at high illumination with a minimum of glare from a light source inherently low in unit brightness. For this reason, long-tube mercury vapor lamps of the Cooper Hewitt type have been widely adopted, as they furnish practically glareless light. In addition, the proper location of a longitudinal light source of this type permits directional control of shadows. Actually, the complete elimination of shadows, such as results from totally indirect lighting, is considered as "too flat" by most printers, giving the type a uniform gray appearance somewhat difficult to read.

Newspaper plants have long used mercury light widely, both in the composing room and for proof reading, where work done at high rates of speed over long periods of time makes the need for good lighting even greater than in many other difficult seeing tasks. Proof reading, in addition, requires particular attention to the problem of eye-fatigue.

Many electrotypers use this method of lighting for aiding work at the routing table, where fine work requires adequate lighting without glare from the bright metal. Cooper Hewitt lamps are usually suspended from three to four feet above the table, furnishing illumination levels as high as 100 foot-candles.

Recent developments have been made in the Cooper Hewitt lamps. The new lamps operate in a horizontal position, rather than at the slight angle formerly required for operation. A new principle of starting makes it possible for these lamps to start the instant the current is turned on. Finally, they operate at greater efficiency, producing 22% more light per watt than formerly.

(To Be Continued)

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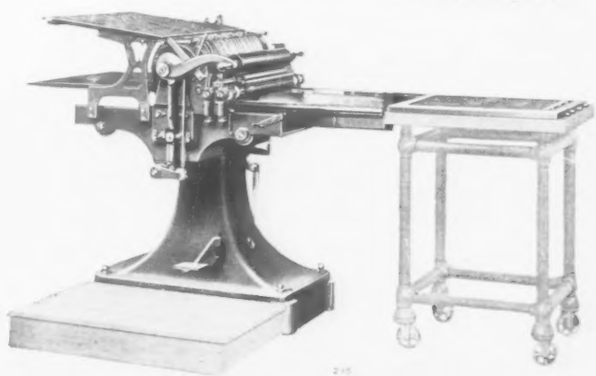
This is an actual reproduction of a proof produced on a Potter Proof Press. It provides positive protection against trouble and errors—shows up bad letters—speeds proof reading.

Precision built to production press standards, with reciprocating bed passing under a rotating cylinder mounted in rigid frames, Potter Proof Presses are ideally adapted to both job and newspaper composing rooms. Made in three sizes—for perfect proofs on anything up to a full-page newspaper ad. Shown below is the No. 3 Potter, complete with feed board and inker attachment. Takes a form 25x25 in. Elevating blocks raise press bed to standard form truck height. Write for full data.



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Eastern Newspaper Supply

Presents the new, improved method of cut mounting. No tacks. No cement to squeeze out. Simply lay a strip of this super thin tape under cut, press down with hand, and cut is there to stay. When through, the tape strips off, leaving clean surface on both cut and base. Economical to use.

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Reliable dealers everywhere are glad to point out the many features of our magazines.

MONTGOMERY & BACON
TOWANDA, PENNA.

Patents

All of Recent Date

Bookbinding:

2,099,881. BINDING DEVICE. Charles E. Emmer, Chicago, Ill., assignor to Cerelo, Inc., Chicago, Ill., a corporation of Illinois. Application October 16, 1935, Serial No. 45,175. 6 Claims. (Cl. 129—1).

5. A binding device comprising a strip provided with a plurality of arcuate arms extending from the longitudinal edges of the strip and arranged in pairs adapted to be pressed into ring form, and means for connecting the free ends of each pair of the arms comprising projections and projection-receiving recesses adjacent each of the free ends, the recess of one arm of each pair being aligned with one face of the projection of the arm, the recess of the other arm of each pair being aligned with the opposite face of the projection of the arm, the arrangement being such that as the arms are pressed to ring form the projection of each arm serves as a guide to direct its mate into the cooperating receiving recess.

Composing Machines:

2,100,304. TYPOGRAPHICAL MOLD AND SLUG. Edward M. Righter, Lincoln, Nebr., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application June 5, 1937, Serial No. 146,665. 25 Claims. (Cl. 199—57).

1. A mold for a slug casting machine having non-adjacent longitudinal casting slots of different heights and a communicating passage between the slots of less height than either of the slots.

2,100,305. TYPOGRAPHICAL MACHINE. Samuel E. Sperry, Hollis, N. Y., assignor to Intertype Corporation, Brooklyn, N. Y., a corporation of New York. Application October 21, 1936. Serial No. 106,910. 8 Claims. (Cl. 271—48).

1. In a typographical machine having a toothed rotatable mold disk carrying a plurality of slug casting molds and a driving pinion movable into and out of mesh with the disk and cooperative with the disk when in mesh therewith for rotating it to bring a mold in position for use into slug casting and ejecting positions, a mold selecting pinion having a number of teeth of a ratio to the number of teeth on the disk differing from the ratio of the number of teeth on the driving pinion and on the disk and corresponding with the number of molds on the disk, the mold selecting pinion being normally disengaged from the disk but movable into engagement to rotate the disk and thereby bring another mold into position for use, and means operative upon such engagement of the mold selecting pinion with the disk to disengage the driving pinion.

2,100,507. TYPOGRAPHICAL SLUG CASTING MACHINE. Arthur Staniland Hayward and Victor Dougall, Atrincham, England, assignors to Linotype and Machinery Limited, London, England. Application August 3, 1936. Serial No. 94,001. In Great Britain August 14, 1935. 6 Claims. (Cl. 199—51.)

1. A typographical slug casting machine comprising matrix-clamping jaws and a control rod, means for conditioning the control rod for a quadding or centering operation of the jaws, a device for justifying the matrix line, means for limiting the movement of the justifying device, and means associated with the conditioning means whereby the limiting means are set, in order to operate when the movement of the jaw control rod exceeds a prearranged amount.

2,100,528. ATTACHMENT FOR TYPE CASTING MACHINES. Joe V. Whitmer, Los Angeles, Calif. Application March 9, 1934. Serial No. 714,785. 1 Claim. (Cl. 199—52.)

In combination with a type casting machine having an assembling elevator in which a plurality of matrices are assembled and having molding apparatus for molding lines of type when the matrices are started into operation by delivery of the matrices from the assembling elevator and having a pinion manually operable by the operator for moving the mold disk to select different ones of the molding blocks and having ejector means for ejecting molded lines of type from the molding blocks, an ejector adjusting lever for adjusting the ejector to correspond to the selected molding blocks, an attachment for the machine including a shaft extending across the machine below the pinion and the assembling elevator, a locking lever secured to the shaft and disposed at the rear of the assembling elevator for movement between a position engaging the assembling elevator and to a position disengaging the assembling elevator, a pinion lever secured to the shaft and extending upwardly into engagement with the pinion, whereby movement of the pinion to make a selection of molding blocks will rotate the shaft and move the locking lever into engagement with the assembling elevator, spring means normally urging the locking means out of engagement with the assembling elevator, latch means for holding the locking means into engaged position when so moved, and means actuated by movement of the ejector adjusting lever for releasing the latch means.

2,101,113. CONTROL UNIT FOR LINE CASTING MACHINES. Lester M. Walden, Chicago, Ill., assignor, by mesne assignments, to Teletypesetter Corporation, a corporation of Delaware. Application February 16, 1933. Serial No. 656,984. 19 Claims. (Cl. 199—18.)

1. In a line composing machine, an automatic control unit, an elevator for raising assembled matrices initiated by the unit, means for arresting the operation of the unit during the transit of the elevator and until it returns to a normal position, and means for permitting a partial return only of the elevator and for preventing the resumption of operation of the unit in the event of an unsuccessful attempt at operation of the elevator.

2,102,127. DUPLEX RAIL SHIFT MECHANISM FOR LINE COMPOSING MACHINES. Louis M. Potts, Evanston, Ill., assignor, by mesne assignments, to Teletypesetter Corporation, a corporation of Delaware. Application August 19, 1936. Serial No. 96,735. 25 Claims. (Cl. 199—29.)

1. In a linecasting and composing machine, a control unit including a plurality of elements arranged to be set permutably, selectable bars controlled by the elements for performing auxiliary functions, an assembler elevator, a duplex rail, mechanism for operating the duplex rail comprising a member operative upon the operation of one of the selectable bars, means for holding the member in its operated position, and means responsive after a predetermined time interval following the operation of the selectable bar for utilizing the action of the member to effect the corresponding movement of the duplex rail.

Patent Papers

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D.C., and enclose 10 cents for each patent paper wanted.

Plate Making:

2,099,916. COLOR CORRECTED PRINTING. William J. Wilkinson, Eastchester, N. Y., assignor of one-half to Miehle Printing Press and Manufacturing Company, Chicago, Ill., a corporation of Illinois. Application November 21, 1935. Serial No. 50,867. 15 Claims. (Cl. 95—5.1.)

2. In the art of printing, making a set of yellow, red and blue separation-negatives of the subject through violet, green and orange filters respectively, making a first positive of the yellow-separation negative, making a yellow overlay from a combination of the first positive and the blue-separation negative, making a color-corrected yellow printing-plate from the overlay and the yellow-separation negative, making a red positive overlay from the blue-separation negative, making a color-corrected red printing-plate from the red-separation negative and the red overlay, making a third positive of the blue-separation negative, making a blue overlay from a combination of the yellow-separation negative and the third positive, making a color-corrected blue-separation printing-plate from a combination of the blue-separation negative and the overlay, and printing in superposed relation with the printing-plates.

Printing Presses:

2,099,879. APPARATUS FOR PRINTING AND DRYING. Charles E. Wooddell, Niagara Falls, N. Y., assignor, by mesne assignments, to The Carborundum Company, Niagara Falls, N. Y., a corporation of Delaware. Application December 23, 1935. Serial No. 55,742. 5 Claims. (Cl. 101—420.)

2. Printing and drying apparatus comprising, in combination, a platen roll for supporting web sheet material previously printed on one side, means for printing the opposite side of the web sheet, a bilaterally faced granular coated web cooperating with the platen roll to prevent offsetting of the printed side of the web sheet during the second printing operation, means for moving the web sheet and the granular coated web and supporting the two webs in a continuous interleaved fashion whereby smearing of the printed images is prevented during the drying.

2,100,207. PRINTING PLATE CYLINDER. Henry A. Wise Wood, New York, N.Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Original application May 5, 1931. Serial No. 535,165. Divided and this application June 29, 1932. Serial No. 619,887. Renewed May 4, 1937. 6 Claims. (Cl. 101—378.)

1. The combination with a printing plate cylinder, of oscillatable clamps for the printing plates, a rod carried by the cylinder, a shaft, the rod and shaft having cooperating cam surfaces on their adjacent ends, whereby the turning of the shaft will move the rod longitudinally, and means connected to the rod for swinging the clamps into and out of clamping position according to the direction in which the rod is moved.

2,100,208. MARGIN BAR FOR PRINTING CYLINDERS. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application March 21, 1934. Serial No. 716,560. Renewed May 4, 1937. 6 Claims. (Cl. 101—378.)

1. The combination with a printing plate cylinder having a longitudinal groove, of a pair of margin bars located in the groove and projecting beyond the surface of the cylinder, each margin bar having a projection for engaging the ledge of a printing plate, the margin bars being movable circumferentially to properly hold down the ledges of two plates on the cylinder located on opposite sides of the two margin bars.

2,100,217. PRINTER'S GAUGE. Herbert F. Johnson, Pittsfield, Mass. Application March 11, 1937. Serial No. 130,341. 8 Claims. (Cl. 101—415.)

1. A gauge for use as a side gauge, adapted to be adjustably supported on an arm having a movement imparted thereto in a direction to and away from the side of the sheet to be printed, means between the base of the gauge and the arm to guide the gauge along the arm for adjustment longitudinally and transversely, means to clamp the gauge in the adjusted position, and means connected with the gauge to engage in a slit cut in the tympan sheet to hold the arm and gauge in movable contact with the tympan sheet.

2,100,436. PRINTING. William H. Engel, Mount Vernon, Ohio, assignor to Shellmar Products Company, Mount Vernon, Ohio, a corporation of Delaware. Application March 1, 1937. Serial No. 128,336. 3 Claims. (Cl. 101—416.)

3. The process of printing a web, which comprises printing the web with a relatively slow-drying ink, magnetically depositing particles of a ferrous metal on the web, winding the web into roll form to permit the ink to dry, unwinding the roll, and magnetically removing the particles therefrom.

2,100,852. PRINTING PRESS. Arthur G. Jacobson, Chicago, Ill., assignor to The Miehle Printing Press and Manufacturing Company, Chicago, Ill., a corporation of Illinois. Application April 20, 1935. Serial No. 17,383. 26 Claims. (Cl. 101—137.)

1. In a sheet-fed rotary printing press, the combination of two or more substantially identical printing couples arranged for unit operation, and a plurality of rotary sheet transfer members between adjacent printing couples, each of the transfer members having an operative diameter substantially equal to that of the members constituting the printing couples, and being provided with sheet engaging elements to take a sheet from one couple and carry it past the printing member of the couple to the impression member of the succeeding couple.

2,101,173. PLATE CLAMP. William Gegenheimer, Brooklyn, N. Y., assignor to Willard Manufacturing Corporation, New York, N. Y., a corporation of New York. Application August 26, 1936. Serial No. 98,094. 1 Claim. (Cl. 101—415.1.)

In a plate clamp, a cylinder having an opening in its periphery, a supporting rib inwardly of the circumference of the cylinder and within the opening, levers rockably mounted in the cylinder one on each side of the rib, clamps on the levers, an arm for each lever underlying the rib, adjusting members on the rib engaged with the arms for rocking the latter, screws on the clamps for operating the same, and the adjusting members and screws being substantially parallel with each other, having their operating portions disposed substantially equal distances from the axis of the cylinder and all located relatively close together, thus permitting of adjustments of all the members and screws in one position of adjustment of the cylinder.

2,101,202. DAMPENING MECHANISM FOR PRINTING PRESSES. Burt D. Stevens, Chicago, Ill., assignor to Miehle Printing Press & Manufacturing Company, Chicago, Ill., a corporation of Illinois. Application May 20, 1936. Serial No. 80,700. 21 Claims. (Cl. 101—147.)

1. In a dampening device, a distributing roller, a movable moisture absorbing medium in contact with the roller, the medium having movement in one direction only from a source of liquid supply to a point of takeup, and means directing a blast of air against the medium in advance of its contact with the roller.

2,102,466. PRINTING MACHINE. Harry L. Latz, New York, N. Y., and Stephen H. Plum, 2d, Madison, N. J., assignors to Harry Latz Service Inc., New York, N. Y., a corporation of New York. Application January 4, 1936. Serial No. 57,464. 20 Claims. (Cl. 101—57.)

1. A printing machine for adding printed items to previously printed matter comprising a support for a plurality of slugs each provided with type constituting the item to be added to the previously printed matter, printing mechanism having a linearly movable printing member normally in receiving relation to the support, means for shifting the slugs successively to a position on the support for delivery to the printing member, means for intermittently transferring the slugs in sequence from the support to the printing member for movement therewith and for removing each next previous slug, and mechanism for operating the printing mechanism in the intervals between the transferring and removal of successive slugs to and from the printing member.

THE popularity of the photograph will doubtless reach even greater heights in 1938. This means more pictures and less text . . . more responsibility placed upon the engraver. And those engravers who want their share of the business and the profits, will do well to assure results by specifying metals of uniform dependability, Zomo Electric Zinc and A-Z Alloy. These modern metals are made by the modern electric induction process to meet modern demands.

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FLEX DRY MATS
FLEXIDEAL DRY MAT COMPANY
21 WEST STREET • NEW YORK

Equipment

(*Continued from Page 20*)

is used but all generally used reproduction mediums may be employed, such as lithograph stones, offset, rubber, halftone or line plates, type, etc.

The material to be printed upon lies flat at all times. Both beds are spring mounted to compensate for variations in thickness of stock. Precision guides assure accurate register for multi-color work. With the exception of the feeding operation the press is completely automatic.

The net weight of the "Deffa" is 4100 lbs. for the Model 3; larger presses are proportionately heavier, the Model 7 weighing over 16,000 lbs. net. Motor equipment is of new design. SKF ball bearings are used throughout on the machine. Wherever possible, gears and worm drives run in grease or oil.

The cylinder is mounted in an electrically driven traveling carriage. The motor is mounted directly on the carriage and travels back and forth with it; it reverses automatically at each end of the press by means of automatic controls; the motor is equipped with an electric brake and adjustable disk type friction clutch. The press may also be set to stop after each impression by turning a switch, and it may be stopped instantly at any position. Centrally mounted push-button control is provided. A speed regulator to control the running speed of the press is also furnished. The carriage is directly geared to a rack on each side of the machine and is supported by four rollers on each side, eight in all, fitted with SKF bearings; two rollers on each side bear against an upper rail, two against a lower. The rollers are mounted eccentrically, to allow for adjustment. To allow the cylinder to clear the form and stock when traveling toward the damping bed, the cylinder is eccentrically mounted so that it lifts within the carriage when riding on the raising rails at the fountain end of the machine, and is lowered within the carriage at the other end of the press. In addition to the support given by the eight rollers described above, the cylinder rides on rails which extend over the full length of the press.

The inking system consists of an adjustable fountain with adjustable blade, steel fountain roller, rubber ductor roller, rubber distributor roller, two steel oscillating rollers, two rubber form rollers, each with a steel rider roller, and one rubber distributor roller, also oscillating. As the form rollers pass over the form twice before each impression is made (they ink the form on both the forward and backward travel of the cylinder) they are really equivalent to four form rollers. Of the rollers listed, the fountain roller, ductor and distributor rollers and the two steel oscillating rollers are stationary at the end of the press; the others (two form rollers, two steel rider rollers and one oscillating rubber distributor roller) travel with the carriage. These rollers, as well as the damping rollers, are raised automatically when passing over the stock, and lowered automatically when they are above the form. The period of contact between ductor and distributor rollers is adjustable, so that just the desired amount of ink is furnished. The entire stationary section of the inking system is operated by its own individual reduction gear chain drive motor, equipped with speed regulator.

The damping system consists of an adjustable damping bed and two molleton rollers with an oscillating

rubber roller traveling with the carriage. It is not necessary to use the damping system unless offset plates or stones are being used. When working with electros, rubber plates, etc., the press can be run as a dry offset press.

The cylinder rubber blanket is easily put on or removed. Each end with its flannel liner is fastened to a flat slotted bar, which is in turn fastened to the cylinder by a centrally locked holding bar to apply uniform tension to each end of the blanket.

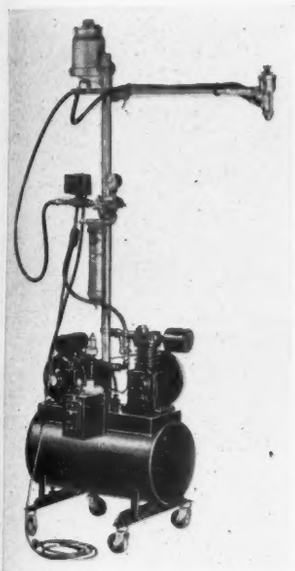
P-Double-E Index

File technical literature according to the symbols in the P-Double-E Filing System. Then when you want to locate it for specific information it will be easy to find. The system for one or more departments is easily set up.

Junior Model Spraying Equipment

Two new Junior Models have been added to the DeVilbiss line of spray equipment for the elimination of offsetting. These were developed for use with small job presses such as Kelly, Miller Hi-Speed, Miehle Vertical, Kluge, Chandler and Price and other small presses in printing plants, where it is inadvisable to tie up standard production spray equipment on jobs running on the smaller presses.

The new outfits, differ only from standard equipment in that they are smaller, designed for less severe service,



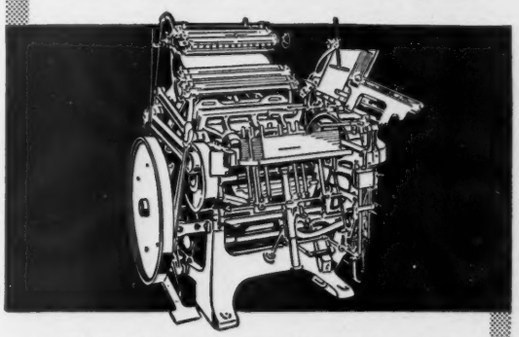
View of one of two new DeVilbiss Junior Model Spraying Equipments. This one is fitted with air compressing and is designed for use on Kelly, Miller Hi-Speed, Miehle Vertical, Kluge, Chandler & Price and other small presses. The other model is the same as this except it is not provided with the air compressing equipment for use in shops already having air service.

and do not have as great capacity. The automatic spray gun furnished with the Junior Models is the same as that included in the standard outfits. It is, however, provided with a special air cap of low air consumption, adapting the gun for use with an air compressor as small as ¼ hp. Air purifier, pressure regulator, gauge, electrically operated air valve and other parts suitable to the equipment are provided.

Both outfits have one quart gravity feed material container, equipped with fluid level gauge. One outfit is complete with ¼ hp. air compressing equipment; the other, less air compressing equipment, is for shops already having compressed air.

P-Double-E File No. 5EE

THE 14½ x 22 Craftsman Press
WITH
AUTOMATIC FEEDER



● Combines the operating ease and economy of a large size platen press, with automatic feeding and high average daily production.

Handles any stock from light weight bond to heavy board — rectangular and odd shapes, cartons, book covers. Gives fine results on any work from simple type forms to process color printing. Exceptional ink distribution, accurate register, great impressional strength, quick and easy makeready—these are only a few of its many money-making features.

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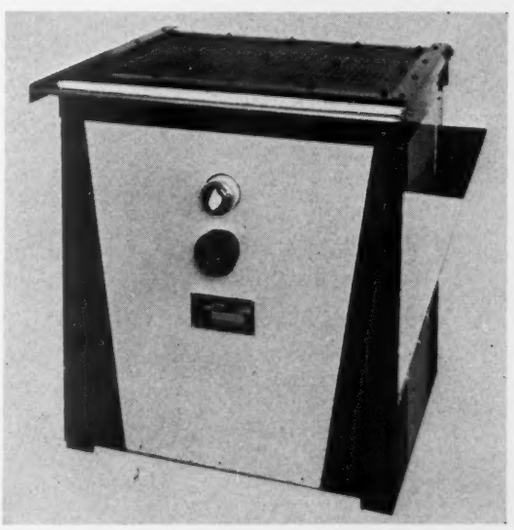

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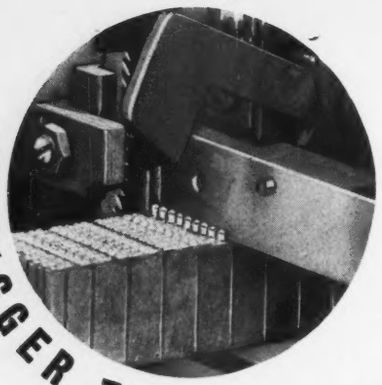

NO BIGGER THAN AN 18 POINT

.PERIOD

The little projections on the linotype slugs illustrated are the guides which enable the Rouse BAND SAW to cut a full galley of slugs to variable measures in 35 SECONDS. Every slug may be a different length or all alike — *the speed is the same.*

An illustrated circular shows in detail how these projections are cast in the slug, how lengths are automatically selected, and other features of the Rouse BAND SAW. It will be sent at your request — without obligation to you.

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SALES REPRESENTATIVES IN PRINCIPAL CITIES

UNIQUE CAPITALS

C. H. Griffith, vice-president in charge of typographic development with the Mergenthaler Linotype Company, announces the completion of Unique Capitals for optional use with all three weights of the Erbar family and with Gothic No. 13. "The use of these Unique Capitals," says Mr. Griffith, "gives the user of Erbar or Gothic No. 13 an extra and different looking font, in each instance, with the addition

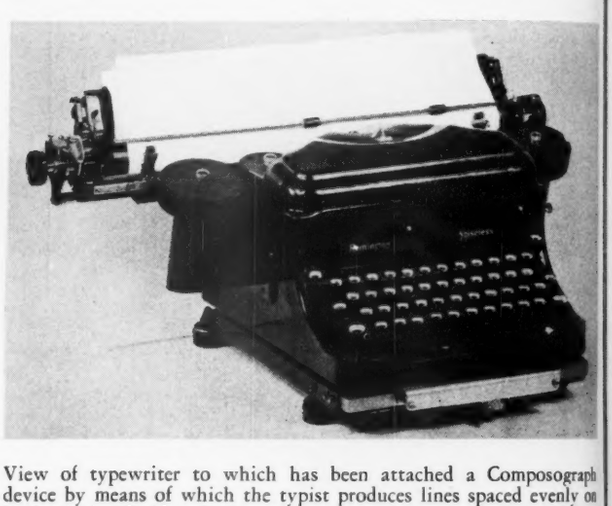
AEFGKMNSWY
AEFGKMNSWY

of ten or eleven characters. The substitution of Unique Capitals for the regular capitals gives each font a different appearance and one that can be highly effective in advertising and various kinds of commercial printing. Already these Unique Capitals are being widely used in travel advertising."

Shown here are the ten Unique Capitals in 28 point Erbar Medium Condensed, followed by a line of the regular characters, for contrast.

The Composograph

Composograph was conceived by its inventor, A. F. Colton, as a device for producing justified typewritten straight matter composition to be reproduced by photo-offset. While it is expected to be utilized in other fields to some extent, it is designed primarily as an adjunct to offset printing for automatically justifying a typewritten line. It can be assembled with five leading makes of typewriters. However, it cannot be shipped



View of typewriter to which has been attached a Composograph device by means of which the typist produces lines spaced evenly on the right-hand side.

to the purchaser and clamped or fastened to his typewriter.

The Composograph functions as follows: The operator first types the line at one side of a sheet of paper; then it is retyped at the same level opposite the line typed at the left. On the second typing it is justified. Here are the steps followed by an operator who has been handed a sheaf of copy to Composograph. For illustrative purposes, it is assumed that the space for this copy to fit is thirty characters wide.

First, the operator sets the line length scale to thirty. The machine is now set to type any number of lines.

Second, the first line is typed. When the line has been typed to within eight characters of the line length (22), the bell on the typewriter rings to warn the operator that the line is within the corrective range and that eight characters are left in which to end a word, add a short word or hyphenate a long word, whichever the case may

There is no mystery about the production of a squared-up column of words with this device. Any individual who can type "Mary had a little lamb," depress the tabular key and re-type "Mary had a little lamb" can operate the device. Complete instructions on the operation of the machine would not cover the back of a postal card.

There is no mystery about the production of a squared-up column of words with this device. Any individual who can type "Mary had a little lamb," depress the tabular key and re-type "Mary had a little lamb" can operate the device. Complete instructions on the operation of the machine would not cover the back of a postal card.

Miniature reproduction of typing executed on a typewriter to which has been attached the Composograph device, whereby the operator is enabled to type the line at the left, after which the operator depresses a justification bar. The corresponding line opposite the first typing is then re-typed, the justifying apparatus causing each line to space equi-distant length automatically.

be or, in other words, the line must be ended within this eight-character corrective range.

Third, when the line is completed with not less than twenty-two or more than thirty characters, the justification (tabular) bar is depressed which automatically sets and locks the justifying mechanism. The first line is then retyped character for character and it comes out to a full thirty character length line, even though it may contain twenty-three characters.

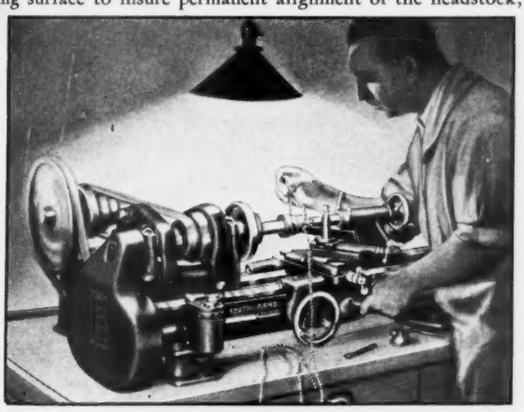
The operator then shifts the carriage back and types the second line, following the same procedure as outlined above. The third and subsequent lines are but a repetition of the first or second. The operator does no counting or calculating of any kind. The extra space at the end of the line is spread over the entire line on the second typing, evenly divided between each character—not inserted between the words.

9-In. Workshop Precision Lathe

A 9-in Workshop Precision Lathe for 1938 is announced by the South Bend Lathe Works. The new model has many new features, and is offered in seven different types. The new Lathe is regularly equipped to cut screw threads from 4 to 112 per inch, including 11½-in. pipe thread, and has power longitudinal feeds of 0.002 in. to 0.015 in. per revolution of the spindle. Another feature is the new 12-speed model with spindle speeds ranging from 40 to 1200 r.p.m., adapting the lathe to machining very small diameter parts of steel, cast iron, brass, aluminum, bronze, and other metals with precision-accuracy.

Other features are: A simplified twin gear reverse for cutting right and left-hand screw threads; improved back-geared headstock with adjustable and larger spindle bearings and a ball thrust bearing on the ¾ in. hollow steel spindle; a heavier designed saddle with adjustable gibs on cross feed and compound rest; a precision lead screw guaranteed to meet the most exacting requirements for cutting accurate screw threads on master taps, precision thread gauges, etc.; and, all gear teeth are precision cut from solid steel or semi-steel blanks.

To insure precision-accuracy on all machining operations, the one-piece cast, semi-steel lathe bed has prismatic v-ways, handscraped bearing surface to insure permanent alignment of the headstock, tail-



stock and carriage. Four bed lengths are available 3-ft., 3½-ft., 4 ft., and 4½-ft., with distances between centers of 17 in., 23 in., 29 in. and 35 in.

More than 35 attachments may be fitted to the 9-in. Workshop Lathe to increase its range of operations.

The company is issuing a new Catalog No. 46, illustrating, describing, and pricing the new 1938 model 9-in. South Bend Workshop Lathe. The book also gives valuable instruction on performing all types of lathe work. Any reader interested in securing a free copy may write the Technical Service Department, South Bend Lathe Works, South Bend, Indiana, mentioning this magazine.

P-Double-E File No. 1CC

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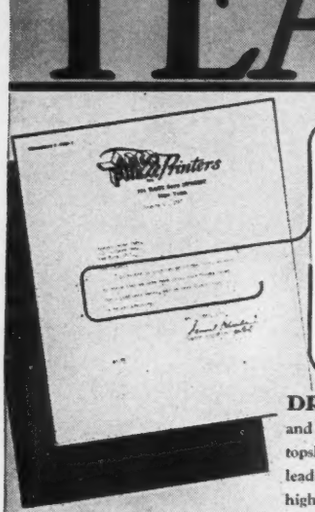
YEARS!



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DRUMHEAD — Save time, temper and money with this ready-cut and scored topsheet of the finest treated jute. Sold by leading paper merchants in sheet sizes for high-speed presses only.

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TREATED JUTE — The old reliable. Its tough jute fibers stand up under the longest runs. Stocked in roll widths for every press.

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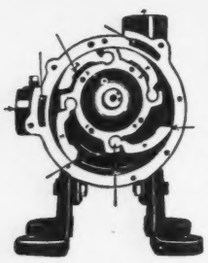

Leiman Bros. Patented Rotary

AIR PUMPS

The printers' air pump for all feeders—patented positive air pumps for blowing and vacuum pickup—rotation counter clockwise scoops up the air—they take up their own wear—last a lifetime—many sizes.

Also used on printing frames, gluing machines, ruling, folding, labelling and other machines, for cooling linotype molds, agitating electrotype solutions, blowing dirt out of machinery and type cases.

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Cushman Precision Router
Has every convenience and adjustment found on any other router.

Has no vibration—usually caused by series of belts or pulleys. Saves on current.

CUSHMAN ELECTRIC CO.
Concord, New Hampshire

Cosmetics for Workers

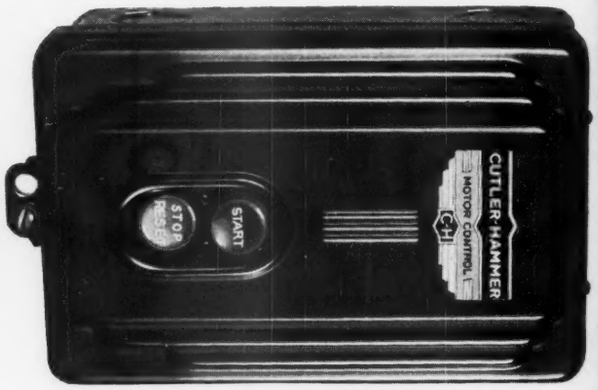
A protective treatment for the hands of industrial workers is being marketed by the Davis Emergency Equipment Co. The treatment consists in the use of two different creams (known as No. 1 and No. 2 Eco Protective Creams) one for protecting the hands during work and the other for use after work.

The No. 1 cream is rubbed into the hands, and on the arms, if necessary, before starting work. It forms an invisible, non-sticky, unnoticeable film which protects the skin from the action of chemicals, solvents, grease, oil, gasoline, and other substances. When the hands are washed the film comes off easily, bringing with it all the dirt, grease, and other substances.

The No. 2 cream is applied after finishing work for the day.

Across-the-Line Starter

A compact across-the-line starter has been announced by Cutler-Hammer, Inc. It is used on polyphase squirrel cage motors. This new starter measures $4\frac{3}{4}$ in. by 8 in. and known as Nema size 0, is rated up to 2 h.p., 550 volts. Among its features are "pushbutton" operation; positive quick make and break "twin-break" mechanism; silver-to-silver contacts; three and four-pole construction; C-H eutetic thermal overload protection, free tripping type; rubber mounted operating mechanism, removable without disturbing the conduit; and an aluminum interior



finish for maximum visibility. The starter is interchangeable for all horsepower sizes within its rating by changing the thermal overload coils.

The modern "airsytled" enclosing case is small, yet allows ample space for wiring, which is further facilitated by a hook-on cover (removable by loosening one screw) which also permits group panel mounting with a minimum clearance between adjacent starters.

The skeleton type starter is for application where it can be built into a machine cavity.

P-Double-E File No. 5CC.

KARNAK BLACK ITALIC

Karnak Black Italic, a new typeface announced by the Ludlow Typograph Company, is now available in matrix form for Ludlow composition, in all sizes from 18 to 72 point inclusive.

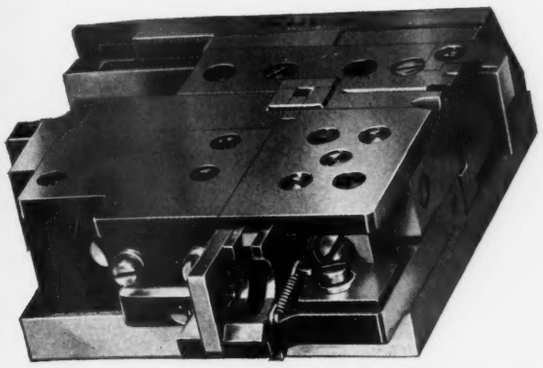
Manufacturer suggests this new typeface can be used for smashing display, when emphatic emphasis within a limited area is sought.

PRINTERS NEED this modern italic

Karnak Black Italic can be used for display lines with almost any body matter, and it combines well with other members of the flat serif family. This new face is shown in the two lines of the 24-point size.

Monotype Composition Mold

While not of immediate newness to the trade, many production executives will be interested in knowing about the Monotype Style 3E Composition Mold which has been so fabricated as to be of permanent point size. Some of the advantages claimed for this mold are: (1) It is easily cleaned, (2) Permits faster casting, (3) Improved water circulation cools mold because water is brought closer to casting and jet cavities, (4) Mold blade can be removed separately without disturbing type blocks, (5) Nick pin is ground as part of type block to reduce wear and possibility of damage, (6) Point size is built into the mold, (7) Sturdy lugs, integral part of water base, are ground for point size to insure accuracy and permanence of point size, (8) The fit of the blade is not affected by heat and it fits as closely when cold as when at full casting temperature. Type metal will not work past blade at time of starting the casting operation, (9) Matrix seat is made of Stellite steel which will stand casting impact longer than any other known material thus reducing wear on the seat.



P-Double-E File No. 1G9.

Hamilton Light-Aliner

The Hamilton Light-Aliner is intended for use in speeding up alignment of color forms, making layouts, checking illustrations and the solving of registry problems. The Light-Aliner is constructed in the form of a steel box, 20½ in. by 23¾ in. On the top is fitted a specially coated translucent glass working surface. The glass is graduated with accurate, permanent lines spaced ¼ in. apart vertically and ⅛ in. horizontally, with heavier indications at every inch. The guide lines are visible through several thicknesses of paper. Manufacturer states eye-strain is minimized by the use of outside frosted light bulbs and the translucent glass top which arrangement breaks up the light rays and prevents glare.

In use, the sheet which is to be lined up is inserted under a clamping bar. The clamping bar may be fastened either at the top or the bottom of the case. After the lights have been turned on, the ruled guide lines will be clearly visible.

The Hamilton Light-Aliner is useful for line-up work, registry problems, color work and layouts. It is also useful for process printers (offset and gravure) for the quick stripping of layouts and makeready.

P-Double-E File Nos. 1B, 2B10, 2D14.

The 1938 P.E.E. Equipment and Supplies Index Reference Number should be on every progressive executive's desk. It is as useful as your phone book.

HOW TO REDUCE YOUR PRESS BLANKET COSTS

The only pressroom superintendent who cannot reduce his press blanket costs is the man who is already using Fitz Livecork Press Blankets. Thats' a statement we are willing to prove. You can get more mileage (by mileage we mean impressions) from Fitz Livecork Press Blankets and at lower mileage cost than from any other blanket. Hundreds of pressroom superintendents will say these blankets produce many more good impressions without make-ready or without taking a permanent set. They will also tell you they are unusually low at first cost.

Drop us a postcard today telling us your requirements and let us send you samples and prices to prove that you can reduce your blanket costs.

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CORK CREEPER

● A New Cork Creeper, 1/16" thick, especially designed to aid in the faithful reproduction of half-tones. To secure uniform molding depth and efficient results, this blanket is highly recommended.

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CORK MOLDING BLANKET

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Technical Books

HANDBOOK *for* PRESSMEN
By FRED W. HOCH
New book by authority on all phases of letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts. $3.00 per copy, cash with order.

The PRACTICE *of* PRESSWORK
By CRAIG R. SPICHER
We offer copies to our readers at the special price of $4.00 per copy, cash with order. No printer should be without a copy. (9000 copies printed.)

MANUAL *of* STEREOTYPING
By JOSEPH GOGGIN
This 256-page book conveys latest technical information and manipulating procedure. Written by a practical stereotyper. Price $5.00, cash with order.

SILK SCREEN METHODS *of* REPRODUCTION
By BERT ZAHN
This illustrated, cloth-bound book describes in complete detail the equipment, materials and technique required. Price, $3.00 per copy, cash with order.

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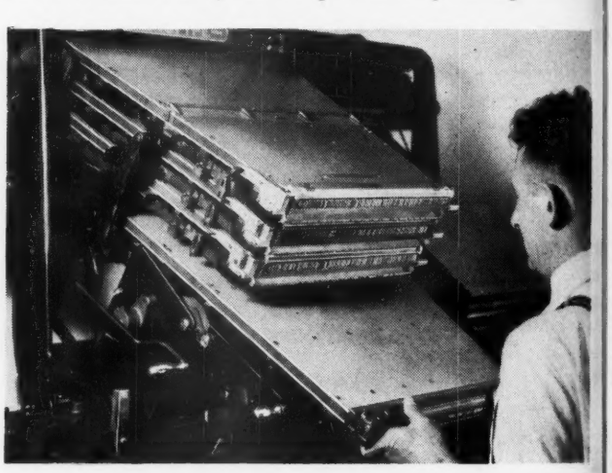
Linotype Models 31 and 32

Mergenthaler Linotype Company executives have announced two new models of Linotypes—Master Models 31 and 32, single-distributor machines. The design of the machines is such that they may be considered four-magazine versions of the Models 8 and 14 Linotypes. In the new models, however, greater face capacity, faster magazine change and increased operating flexibility have been provided.

The Master Model 31 may be fitted to carry from one to four magazines, in any combination of 90 or 72 channel magazines. Master Model 32 may be fitted to carry from one to four 90 or 72-channel main magazines in any combination with four, three, two or one wide 34-channel auxiliary magazine.

Faster magazine changes over previous Models 8 and 14 are provided for by an in-built rail mechanism permanently attached to the magazine frame housing. When not in use the rails fold back out of the way. All magazines are changed from the front of the machine. When proceeding to change magazines, the act of swinging down the left rail raises the magazine clear of the escapement and at the same time also swings down a corresponding rail at the right side of the magazine frame. The pair of rails provide a support upon which the magazine slides down from the frame for removal. The rails retain all of the magazine weight until it is clear of the machine as it comes to rest in a vertical position at the lower extremity of the rails for removal from the machine.

A magazine locking device prevents operating the left rail unless the matrices are locked in the magazine. An additional safety device prevents operating the rail



to change the second, third or fourth magazine unless the necessary clearance has been provided by operation of the magazine separating handle.

The one-piece magazine frame guide rails are constructed of hardened tool steel and are gauge-set and doweled to the proper slope. Alignment of all magazines at the matrix delivery point is controlled by hardened steel banking blocks attached to the lower magazine frame. The three upper frames are adjustable both vertically and horizontally in relation to the lower frame.

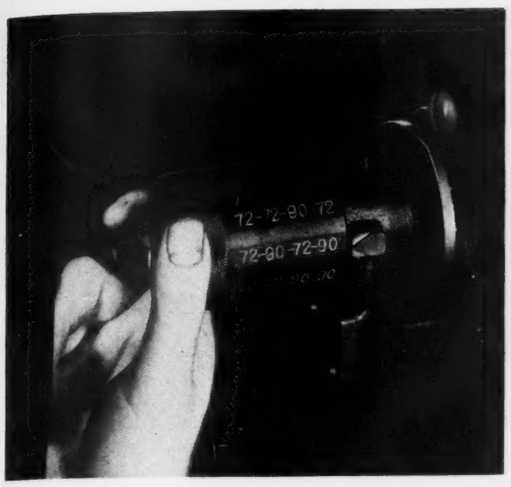
Incorporated in the design of the new Models 31 and 32 is a straight-line matrix escapement. With direct action from keyrods to the escapement pawls, manufacturer states, there is 10% less wear on keyboard rubber rolls than on the former matrix release mechanism.

THE "CHANNEL CHOOSER"

To provide automatically for 72 and 90-channel keyboard operation from a 90-channel keyboard, a device called the "Channel Chooser" is mounted behind the

keyboard. It facilitates setting the short keyrods for any desired 90 or 72 channel magazine sequence.

Operated by a twelve-sided marked dial located back of the keyboard, two cams are positioned to control a push-pull lever. This in turn controls the contact of the short keyrods between the 90 and 72-channel banks of long keyrods, according to the marking on the dial setting. The actual shifting of the short keyrods occurs with the operation of the One-Turn Shift. A change of the dial setting, bringing up a new 72-90 sequence, of



course calls for a corresponding change of sequence of magazines, escapements and channel entrance locating blocks. By means of the Channel Chooser the following variety of combinations, eleven in all (one being repeated due to the cam profile), may be obtained:

Four Magazines

72	90	72	90	72	72	72	90
90	72	90	90	72	72	90	90
72	90	90	90	72	90	90	72
90	90	90	72	90	72	72	90
90	90	72	72	72	72	90	7
90	72	72	72				

For all 72 or all 90-channel operation the Channel Chooser is disconnected after setting the short keyrods to either the 72 or 90-channel contact. Since the magazines are run all the way up before setting the Channel Chooser, the same dial serves for both three and two-magazine machines, the fourth and third designations being disregarded respectively.

Other New Features

The assembling elevator has been fitted with reinforced front plate to prevent springing, covered gate pawls to permit spaceband sleeve lugs to ride on stationary rails and an adjustable gate to compensate for wear on hinge rod bearings,

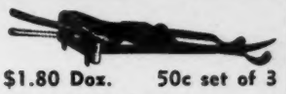
Interlocking assembler and assembler entrance covers prevent matrix lugs from catching and burring.

Each of the keyboard cam yoke frames has been reinforced with a bridge to prevent springing of the trigger hinger bar.

Besides the Optic-aid front, satin-finish chromium plating of certain parts prevents glare. Other new features are: New pot pump plunger sleeve, adjustable stroke slug lever operating from cam on first elevator slide, sectional distributor bars to permit ultimate replacement of a short worn section instead of replacing the complete bar, four-six-em slug guide to prevent short slugs falling off their feet in the galley, grease cup for mold disk guide support screw, the channel entrance slides in a groove or track to compensate for wear of old magazines.

P-Double-E File No. 1G.

SPRING TONGUE GAUGE PINS



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The P-Double-E Filing System is a storehouse for equipment information. Consult it often.

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American Made by

Webendorfer-Wills Co., Inc.

Builders of Printing Machinery for Over Thirty Years

Mount Vernon, New York, U.S.A.

Rosback Fanfold Perforator

The Rosback Electric Eye Fanfold Perforator will automatically feed, perforate, head and side-punch fanfold forms. The machine operates by the difference in reflected light from a black spot printed on the back side of the Fan-Fold forms in a definite position with respect to the line of perforation.

The functions of the various component parts are explained below. The corresponding numerals with arrows pointing out these parts are explained as follows:

1—Shows the electric eye in place in the machine. Light is reflected from the light source into the photo-electric tube or electric eye.

2—The stock is pulled forward by the automatic feeding fingers. As the spot trips the electric eye the grippers release. The paper is in position to be perforated. A dial setting governs length of travel of these fingers.

3—Dial is graduated to permit setting to be made from 3⅛ in. to 16 in. length range for various lengths of forms.

4—Trip for feeding fingers. As the light is reflected into the electric eye, the tubes react to cause a small solenoid pull the trip to release the fingers for accurate register.

5—If the spot does not cause the tubes to function, an automatic shut-off stops the complete machine. This prevents misperforating. When machine is empty of stock it is shut off completely.

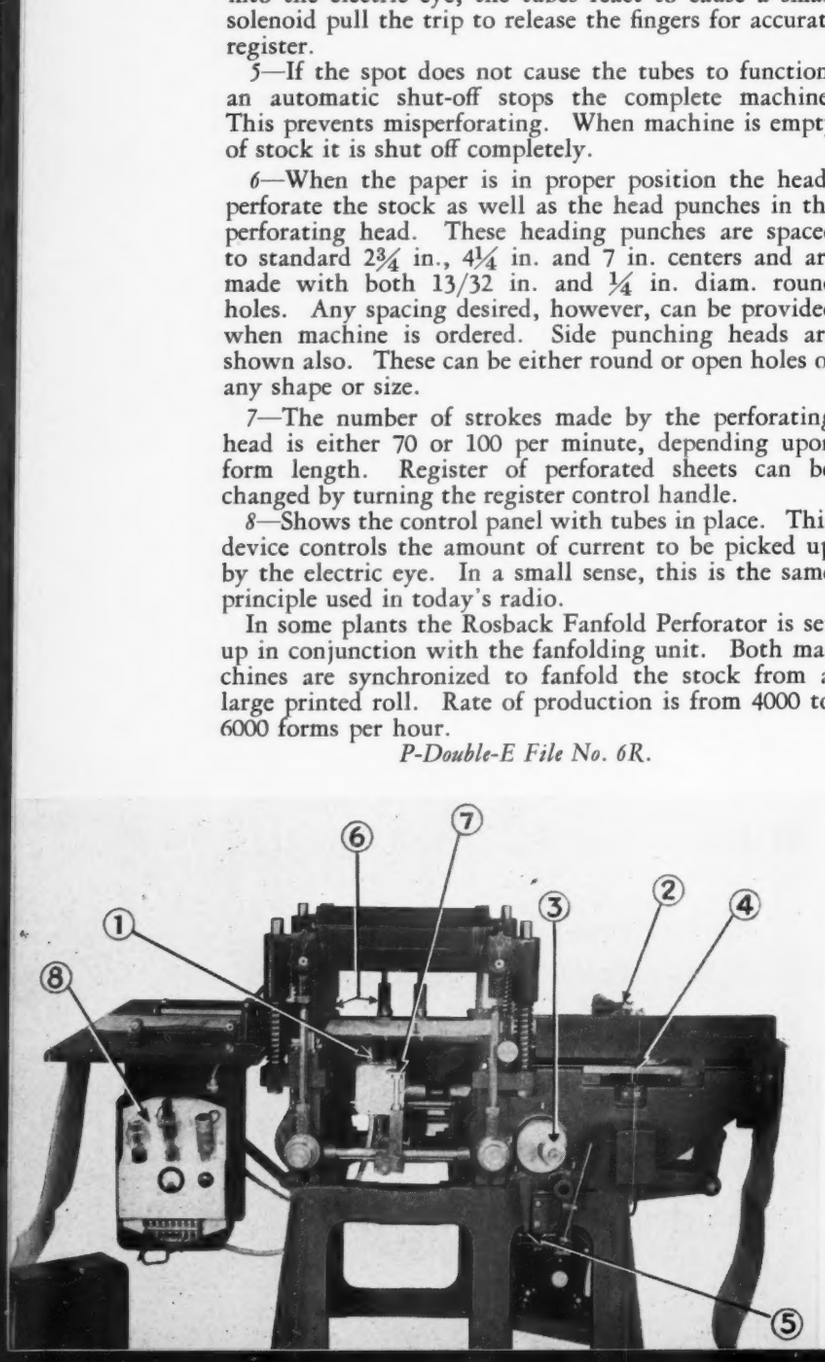
6—When the paper is in proper position the heads perforate the stock as well as the head punches in the perforating head. These heading punches are spaced to standard 2¾ in., 4¼ in. and 7 in. centers and are made with both 13/32 in. and ¼ in. diam. round holes. Any spacing desired, however, can be provided when machine is ordered. Side punching heads are shown also. These can be either round or open holes of any shape or size.

7—The number of strokes made by the perforating head is either 70 or 100 per minute, depending upon form length. Register of perforated sheets can be changed by turning the register control handle.

8—Shows the control panel with tubes in place. This device controls the amount of current to be picked up by the electric eye. In a small sense, this is the same principle used in today's radio.

In some plants the Rosback Fanfold Perforator is set up in conjunction with the fanfolding unit. Both machines are synchronized to fanfold the stock from a large printed roll. Rate of production is from 4000 to 6000 forms per hour.

P-Double-E File No. 6R.



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Booklets—Catalogs—Bulletins

To Keep Up With What's New!

For Your Convenience—Check the numbers of the literature you want on the convenient postage paid return card and mail—we do the rest. This card saves you time and postage.

COMPOSING ROOM

1 Folder entitled "SPEED"—gives information about Hamilton Light-Aliner for alignment of color forms, making layouts, checking illustrations and solving problems in registry. P-Double-E File Nos. 1P, 2B101 and 2D14. See this company's advertisement on page 34.

2 ZINK CUT RUBBER CEMENT—Further information will be mailed to you, if you wish, on the use and application of this cement for mounting cuts. It is discussed on page 43. P-Double-E File Nos. S1A and 2G1-1.

3 POTTER PROOF PRESS—You can have full data respecting this proof press on request. It is described and illustrated on page 47. P-Double-E File No. 1V1.

4 MONOTYPE COMPOSITION CASTER—Monotype users tell of their satisfaction with single keyboard and caster equipment on pages 30 and 31. Full information will be sent. P-Double-E File No. 1G10.

5 12 page booklet on the BLUE STREAK Master Models 31 and 32—Improvements embodied in these new models are described and illustrated in a four-page insert between pages 26 and 27. Available, a 12-page illustrated booklet which tells more about these machines. P-Double-E File No. 1G.

6 ELROD STRIP-CASTING MACHINE—Further information regarding this machine—illustrated on page 5—and specimens of Elrod-Cast Strip material, can be had on request. P-Double-E File No. 1G4.

7 MATRIX CONTRAST SERVICE—You can have full information concerning Matrix Contrast Service for line-casting machine matrices. See advertisement on page 12. P-Double-E File No. 1G7.

8 *PLATE-TAK*—The new gummed tape used in mounting cuts. See page 48. Samples will be sent. P-Double-E Index Nos. S1A and 2G1.

9 STREAMLINED INTERTYPES — New Streamlined Intertypes featured on the outside back cover with 101 profit-earning reasons for the success of these machines. You can have complete information. P-Double-E File No. 1G.

10 COOPER HEWITT "SKYLIGHTS"—Said to banish eye fatigue, speed up work and lessen errors. Makers will send complete information. An installation is shown in the advertisement on page 33. P-Double-E File No. 1GG.

11 ROUSE VERTICAL MITERER—On request, will be sent an illustrated circular and the names of nearby users of the Vertical Miterer shown on page 52. P-Double-E File No. 1S.

12 KIMBLE MOTORS—See page 53 Manufacturer claims "Its results amaze you." Complete information will be sent on request. P-Double-E File No. 5CC.

13 New KNIFE WIPER for linotypes featured on page 42. Said to be simple in construction—wipes both ways—easily installed. Sent on approval to responsible firms. P-Double-E File No. 1G8.

14 S.K.F. BALL AND ROLLER BEARINGS are featured on page 10 in a Royle Router. Used in all types of printing equipment. Manufacturer will send particulars. P-Double-E File No. 5C.

15 VANDERCOOK PROOF PRESSES—The No. 325A hand operated Vandercook Proof Press is illustrated on the inside back cover. Complete information and prices will be mailed to you. P-Double-E File No. 1V1.

16 TIMKEN BEARINGS—Maker states "They enable the printer to maintain high printing quality at higher and higher speeds." See page 35. P-Double-E File No. 5C.

17 COMBINATION BRASS AND DURALUMIN MAGAZINES — Discussion about construction of Montgomery & Bacon magazines for line-casting machines will be sent to you on request. P-Double-E File No. 1G.

18 C. & G. SAW TRIMMER—Company will send descriptive literature upon request about the C. & G. No. 3-A Saw Trimmer. It is shown on page 50. P-Double-E File No. 1Z.

PRESS ROOM

19 Illustrated broadside on VULCAN GELASTIC ROLLERS—This well illustrated broadside shows some of the presses for which manufacturers state Vulcan Gelastic rollers are suitable. P-Double-E File No. 5NN. Also see advertisements on pages 45 and 52.

20 14½" by 22" CRAFTSMAN PRESS with Automatic Feeder—Handles any stock from light weight bond to heavy

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Printing EQUIPMENT Engineer

1276 W. 3rd Street

board. More complete description—than given on page 51—specifications and price will be mailed on request. P-Double-E. File No. 5LL28.

21 Illustrated Folder—"NET PRODUCTION IS THE MEASURE OF VALUE IN A NEWSPAPER PRESS"—Discussed in this folder the use of Goss Presses for newspaper printing, r.o.p. color, comics and rotogravure printing. P-Double-E File 5LL25.

22 FITZ LIVE CORK PRESS BLANKETS—These Blankets will produce many millions of impressions without makeready and without taking a permanent set, states manufacturer. See page 55. Samples will be sent. P-Double-E File No. 5L.

23 DEVILBISS SYSTEM—For Preventing Offset on freshly printed sheets. Entirely automatic. See page 7. Full details will be mailed. P-Double-E File Nos. 2D17 and 5EE.

24 DUPLEX UNITUBULAR PRESS—The Twinned Press Equipment illustrated on page 11 for plants desiring to print comics, magazine sections or run of press color work in regular issues. Will send details. P-Double-E File No. 5LL25.

25 HARRIS ONE AND TWO-COLOR OFFSET PRINTING PRESSES—Construction features vacuum control of sheet in delivery. See page 6. Complete information sent. P-Double-E File No. 2E24.

26 CHRISTENSEN STREAM FEEDER—Will keep pace with your highest speed presses. Complete data available by sending specifications, make, style and size your press. P-Double-E File No. 5Q. Turn to page 32.

27 MORRILL NEWSPRINT INK—Recommended by manufacturer for sharp, clear printing . . . clean vivid halftones . . . strong and smooth coverage of large type and solids. Advertisement on page 39. P-Double-E File No. 5W.

28 RIEGEL TYMPANS—See advertisement on page 54. Manufacturer will gladly send free trial sheets.

29 CHAMPION BLACKS—Sinclair & Valentine ink for modern high speed presses. See page 53. Complete information about these inks will be sent to you on request. P-Double-E File No. 5W.

30 COTTRELL'S NEW TWO-COLOR ROTARY PRESS — For process work—shown in an advertisement on page 25. Further particulars will be sent on request. P-Double-E File No. 5LL32.

31 HIGH SPEED PASTERS AND AUTOMATIC TENSIONS—These Cline units are used on high speed newspaper presses and color rotogravure presses. See page 41. Information will be sent. P-Double-E File No. 5R.

STEREOTYPING DEPT.

32 *EASY KASTER*—More detailed information about the new heavy 20" Flat Caster shown on the inside front cover will be sent upon request. P-Double-E File No. 2G6.

33 IMPERIAL PLUS PLAN—Mfr. states: Takes the guess out of maintaining the quality of your type metal. See page 40. Further information will be sent or a representative will call on you. P-Double-E File No. 2G20.

34 CERTIFIED DRY MATS — See advertisement on page 44. Samples and further information to those interested. P-Double-E File No. 2G18.

35 FLAT FORM-O-SCORCH — Detailed information on new Flat Form-O-Scorch shown on page 51 for drying flat matrices is sent to inquirers. P-Double-E File No. 2G12.

36 PREMIER ROTARY SHAVER—This flat shaving Rotary Shaver is shown in the advertisement on page 3. Particulars and price sent on request. P-Double-E File No. 2E27.

37 G. E. METAL MELTING EQUIPMENT—This manufacturer will send further information and a list of 200 newspaper plants now using this equipment. Advertisement on page 46. P-Double-E File No. 2G21.

38 STANDARD PONY AUTOPLATE—Full particulars available on request. It is illustrated on page 8. Manufacturer says machine casts, shapes, shaves, trims and coats the plate. P-Double-E File No. 2G7.

39 CHROME MATS—Advertisement on page 39 says Burgess Chrome Mats hold their depth of mould on stock shelves regardless of weather. Samples mailed. P-Double-E File No. 2G18.

40 FLEX DRY MATS—Advertisement page 50 says' 'Make the most of your modern news type.' Free samples sent. P-Double-E File No. 2G18.

41 DIRECTOMAT MATRIX PRESS—"Will eliminate stretch of the Mat," says Lake Erie Stereotype Equipment Corporation on page 36. Complete data available. P-Double-E File No. 2G10.

42 WOOD DRY MATS—Middletones are featured as being "the balance factor of faithful reproduction" by Wood Flong Corp., in advertisement on page 38. Samples upon request. P-Double-E File No. 2G18.

ENGRAVING DEPT.

43 EDES ZINC—Representatives are listed on page 41. Full particulars will be mailed. P-Double-E File No. 2E12-3.

44 ZOMO-ZINC and A-Z ALLOY—Advertisement on page 49 says More pictures in 1938—More responsibility for the engraver. Further information will be sent. P-Double-E File No. 2E12.

This card must be filled out completely in order to secure the literature you request. Please circle only bulletins you particularly want.

PRINTING EQUIPMENT ENGINEER

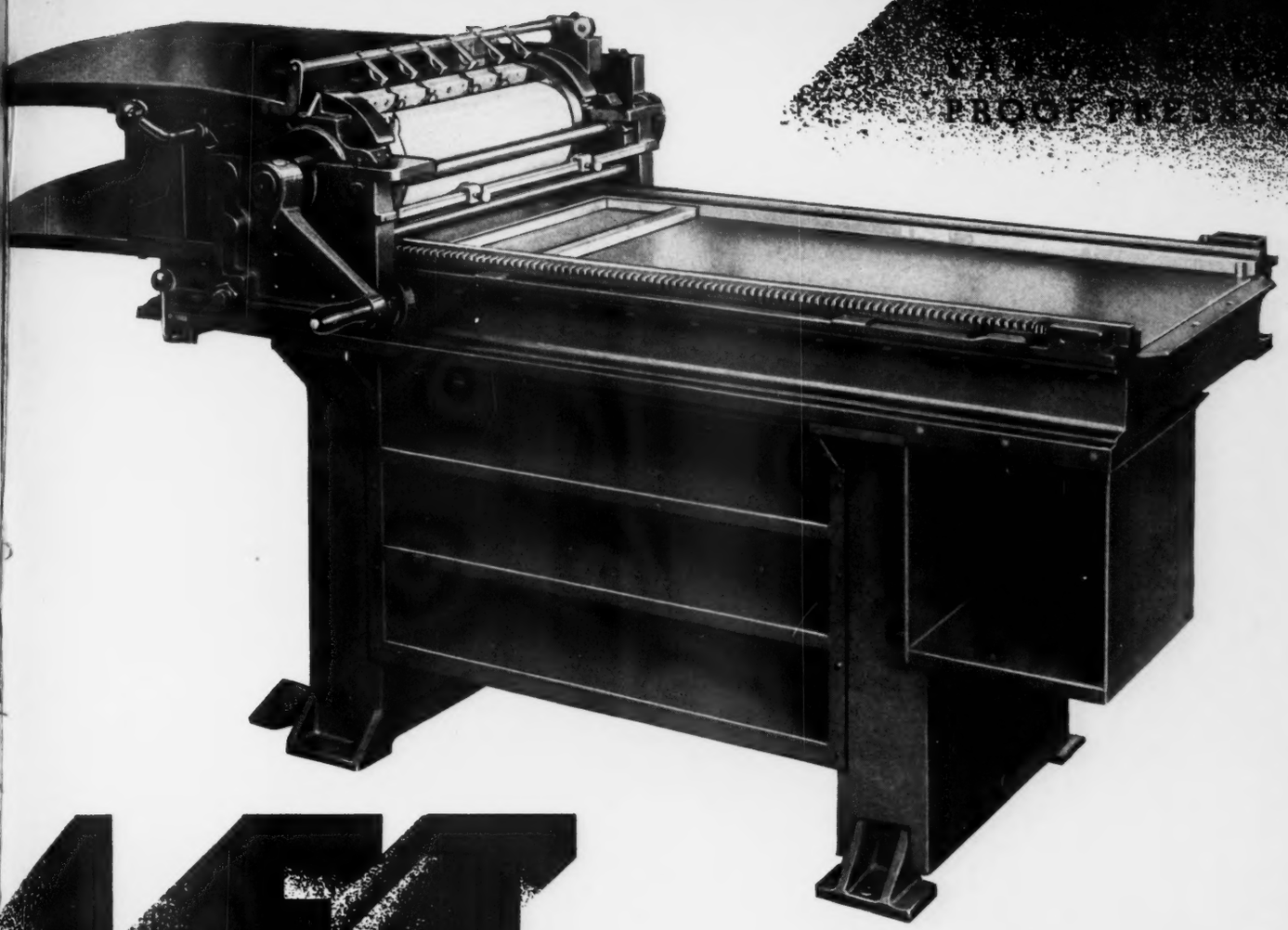
Without obligation please have the manufacturers send me literature circled below. (These numbers correspond to numbers on descriptive paragraphs)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40
41 42 43 44

PRINT YOUR NAME AND ADDRESS

NAME..... TITLE.....

FIRM NAME.....



GET GOOD PROOFS HELP YOU SELL

Printers and publishers alike have proved that good proofs help them sell. In addition, good proofs eliminate errors and create customer good will.

There is no trick about getting good proofs. They are not expensive. They are definitely a good investment.

The No. 325G Hand Operated Vandercook Proof Press, illustrated, prints excellent proofs of forms up to 24" x 24½".

It can be used for checking of cuts and forms and for accurate pre-makeready. No. 325G, though it takes a big form, is simple and easy to operate.

The No. 325A Hand Operated Vandercook Proof Press with special newspaper equipment will prove a full newspaper page in stereotype chase without printing the chase. Iron raising blocks are provided to bring the bed of the press up to the height of the makeup trucks.

Your request for complete information and prices on the No. 325G or No. 325A Hand Operated Vandercook Proof Presses does not obligate you in any way. Write NOW.

Modern Streamlining • New Front Covers • Six-Pocket Mold Disk • Four-Deck Side Unit • Automatic Q

Automatic Line Indentions • Magazine Counterbalance • Wider Main Magazines • Easy Magazine Replace

Two-Piece Escapements • Unit-Built Reed Racks • Automatic Font Distinguisher • Automatic Mixer Se

New-Style Base • Mold Cooling Blower • Hand-Stick Attachment • Low-Slug Quadding • Wide-Tooth Ma

Two-Letter Display Matrices • Simple Mixer Distributor • Overhead Motor • One-Piece Distributor Bra

Delivery Slide Safety • Casting Without Spacebands • Direct-Line Channel Entrance • Pot Pump Rod S

Metal Feeder • Adjustable Pump Spring • Improved Delivery Slide • Vise Jaw Adjustment • Keyboard

Assembler Front Partitions • Slug Lever a

Assembler

Vise Foot Release • Special Alloy Casting

Drop Pump L

Two-Pitch Distributor Screws • Quick-Cha

imple Mixer

Keyboard Locking Lever • Quick Change

d Assembler

Selective Mixing • Light Magazines • Ne

Fixed Mixer

Gas Burner Control • Automatic Magazin

gazine Flexi

Black Steel Finish • Rigid Pi Tube • A

pecial Mold

Improved Electric Pot • Adjustable Distrib

ix Delivery

Interchangeable Magazines • Alemite Lub

New Knife

Adjustable Vise Closing Attachment • Qui

tar-Wheel

Oilite Bearings • Adjustable Mold Banki

ntrance Parti

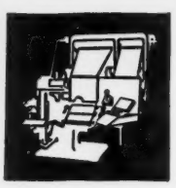
Channel Entrance Lock • Automatic Distr

natic Blank

Distributor Accessibility • Matrix Retaining Rails • Second Elevator Weight • Screw-Bearing Knife

Mold Disk Support • Precision Spacebands • Improved Mold Wiper • Positive Pump Stop • Assembler

Removable Keyboard Banking Bar • Finger-Flip Type Changes • Positive Assembler • Keyboard Acces



Orders and repeat orders for Streamlined Intertypes continue to pour in. What is behind the outstanding success of these new machines? • The answer, of course, is the 101 features with which the latest Intertypes are equipped. These features have attracted the attention of printers and publishers throughout the country, because each feature of the 101 is designed to speed production, cut costs, or in some other way improve the operating efficiency of the Intertype. • If you have not yet investigated what Intertype has to offer in this year 1938, we urge you to do so now. Intertype Corporation, 360 Furman St., Brooklyn, N. Y.